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ABSTRACT

This collection of 19 papers is the third resulting from the Polish-English Contrastive Project. The overall purposes of the project are to prepare a Polish-English contrastive grammar and to develop pedagogical material. The basic model used for the research is the transformational generative one. This volume is divided into 3 sections: (1) General--6 articles dealing with general aspects of contrastive analysis and its implications for language instruction, (2) Phonology--4 articles dealing with the contrasts between Polish and English phonology, and (3) Grammar--9 articles dealing with topics in contrastive syntax and semantics. A review section follows, along with a bibliography of English-Polish contrastive studies in Poland. (CLK)

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THE POLISH-ENGLISH CONTRASTIVE PROJECT

PAPERS AND STUDIES IN CONTRASTIVE LINGUISTICS

VOLUME THREE — 1974

Editor: JACEK FISIAK
Associate editor: LESLIE BAILEY
Assistant to the editor: ALEKSANDRA MIESZEK

DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

cek Fisiak

POZNAŃ 1975
ADAM MICKIEWICZ UNIVERSITY, POZNAŃ
CENTER FOR APPLIED LINGUISTICS, WASHINGTON, D. C.

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GENERAL

CONTRASTIVE ANALYSIS AND THE MODERN THEORY OF LANGUAGE

MARIA LIPIŃSKA

Adam Mickiewicz University, Poznań

INTRODUCTION

In any science systematic observation is possible only within the framework of some explicitly stated theory. The subjects of an inquiry depend on the theory and are formulated in terms of a given theory. The data themselves only to a little extent suggest the possible topics and methods of investigation. In fact, there are no such things as pure data. The results of any observation are contingent not only upon the limitations of sense organs and various instruments, but also upon the observer's preconceptions, expectations, and goals. The connection between data and theory is measured in terms of the level of abstraction which the theory represents. In a low-level theory which aims merely at the classification and summary of the data the influence of data on the choice between significant and insignificant facts is much greater than in a higher level theory[1]. In high-level theories which are largely deductive and which aim at constructing general laws for the explanation of data, the theory and the data are remote from each other. It is obvious that for the same data more than one theory are possible. They can differ among themselves in their explanatory power, their truth relation to reality (as represented by the data), the range and value of predictions, etc.

If Contrastive Analysis (CA) is defined generally as a method which enables the differences and similarities between languages to be stated explicitly[2], its task can be approached in many different ways depending upon the theory of language to which the investigator adheres. The results of investigation will differ to a considerable extent because the task itself, especially the terms "difference" and "similarity", will be understood differently in two different theories. For instance, the structural linguist will apply these terms to the surface phenomena such as sentence structure, modification structures, and the like. The analyst who thinks in terms of the transformational theory of language will compare rules which relate the common deep structure to different surface structures rather than compare directly the surface elements of two languages.

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[1] The terms 'low- and high-level' theory are used in the sense of Verhaar 1970.

[2] This is the most generally accepted definition of CA see, for instance Di Pietro (1971). He does not, however, mention similarities.

Apart from the divergence resulting from opposite methodological approaches to language and reflected in different formulations of the immediate goals of the analysis, differences can also be found in the philosophical assumptions underlying each school. These differences will influence the final goal of the investigations. It may be expected that structuralists will emphasize the differences among languages, whereas transformationalists will look for the evidence that languages are, after all, 'cut to the same pattern'. Since American descriptivism has its roots in anthropology, it not only retained some of the methods of this discipline but also the general view about the diversity of human cultures reflected at least to some extent in languages. The structuralist's philosophical outlook is mainly relativistic: the weaker (if not the stronger) version of the Sapir-Whorf hypothesis is usually accepted. On the other hand, the transformational school has close connections with some trends of modern philosophy and logic. It's method is deduction rather than induction employed by structuralists, and its philosophical basis, stemming from the Cartesian line of thought, is absolutist: when analyzed at a high level of abstraction, languages are alike. The search for universal linguistic features is the primary objective of transformational grammar.

If transformational grammar were already adequately formulated, the task of CA would be to compare the ways in which common underlying structures are realized as different surface structures. But since such objectives cannot constitute reasonable immediate goals, given the present state of the transformational theory, intermediate goals have to be formulated. One of such goals is finding sub-universals by comparing pairs and larger groups of languages. Proper contrastive studies should be based on a universal grammar and particular grammars should be constructed by means of the same theoretical apparatus for all languages.

Not every model of language can be employed as a framework for contrastive investigation. Models vary with theories and theories depend on goals; hence, different results should be expected in case of each model. It is not the question of which model is better, because without any further qualification such a question is meaningless. One cannot judge one theory in terms of another theory. We can only ask about the degree to which the goals postulated by a given theory have been achieved. If the methods devised by structuralists are appropriate for the descritpion of language, according to their conception of language, it is improper to accuse them of insufficiently describing language in the transformationalist understanding of what language is. One can only argue about what should be the subject of linguistics, i.e. about the goals of linguistic investigation. In evaluating any scientific activity these two criteria should be kept apart:

1. whether the question raised by the scientist has been answered satisfactorily in his theory,
2. whether the question itself was worth pursuing (Starosta 1969: 100).

The second criterion is difficult to be evaluated. One of the important factors involved here is the usefulness of the theory. If the scientist is interested in the relationship of language to the organization of the human mind, then he sees the problem of discovering and describing the deep structures as the interesting one.

Likewise, an evaluation of a linguistic theory can be made only with reference to its goals. If the primary object of CA is taken to be the immediate help in foreign language learning and teaching and if language is conceived of as a system of various items, then the structural method of systematic enumeration of the similarities and differences between two language systems is sufficient. If, on the other hand, CA is to serve not only as a basis for language teaching, but also as a contribution to the general theory of what a human language is, and if languages are viewed as surface realizations of one common 'universal language' whose properties are in strict correlation with the properties of the human mind, then the analysis has to be performed within the framework of transformational grammar. The whole question of the choice between structural linguistics and TG (or any other theory of language), between one or the other type of CA, boils down to the question of what language is. The views concerning the learning and teaching of languages are contingent on the answer to this question.

Transformational theory of language constitutes a better framework for CA than any other theory of language for these two general reasons:

1. it makes psychological claims, i.e., claims that the organization of grammar reveals some aspects of the organization of the human mind,
2. it gives one common theoretical vocabulary for the analysis of all languages, so that different surface phenomena can be accounted for in a uniform way. (Otherwise, it is improper to compare, for instance, an inflected language and an uninflected one in terms of the surface categories, such as cases, which occur in one of them).

Even if the most modest claim of Chomsky's mentalism is accepted (and possibly it could be accepted by most everyone), i.e., the claim that language reflects some properties of thought and that properties of thought are common to the whole mankind, the CA which takes into account this claim is superior to any other which does not.

In accordance with what has been said above, we cannot agree with

Nickel's comment on the use of language models in contrastive studies, especially with the first sentence of the fragment quoted below:

> The use of traditional descriptions will certainly lead to *quicker results.* (underlining mine). A danger inherent in some sophisticated framework such as transformational generative grammar is that the proponent of such a model may easily loose sight of the practical aims he had in mind when starting his investigation. However, the results of more formal and explicit approaches may well be more impressive in the long run (Nickel 1971 : 2).

'Quicker results' could be an evaluation measure of methods and theories only if the results obtained by different methods were equal in value. And this is not the case. In the case of traditional descriptions no special contrastive studies would have to be evoked, because it would mean only a more complete and explicit account of that knowledge which has been, sometimes implicitly and sometimes overtly present in foreign language textbooks and grammars for ages. We will present some postulates for CA in the final part of this paper.

The main argument of this paper can be summarized as follows:

IF 1. CA depends on a general theory of language,
2. transformational theory is the best from the now available theories for the purposes of CA,
3. the general development of the theory depends on the systematic comparison of many languages,

THEN 1. the general philosophical and methodological assumptions are common to both CA and the transformational theory of language and so are the controversial points concerning some of these assumptions,
2. the widening range of language phenomena analyzed by transformational linguists indicates new ways of comparison of languages,
3. the comparison of grammars of different languages, especially those from outside the Indo-European family, may lead to important changes in the ways of explaining grammatical phenomena in other languages, and thus to substantial changes in the general theory of language.

So far, since most of the transformational works were based on English material, some of the rules were capable of accounting for only the facts of English and some related languages. Many grammatical arguments were based on the surface characteristics of the English language, and the conclusions drawn were invalid for other languages[3].

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[3] For instance, the old agrument that the deep structure of imperatives contains such elements as the second person pronoun and the future auxiliary, because these elements are present in tags and reflexives, is not true for Polish:

E. *Eat this apple, will you?*

The main objective of this paper is to discuss the features of the modern theory of language, especially those aspects which have the most immediate bearing on the methods of CA, and then, in connection with this discussion, to present some postulates for CA. In the subsequent sections the following topics are treated:

I. Linguistics and other disciplines — goals and methods of investigation.
II. Main theoretical assumptions of TG.
III. Main methodological principles of TG.
IV. Some related philosophical views on language.
V. Controversial issues of TG.
VI. The Generative Semantics approach to language.
VII. The implications of modern linguistic theory for the contrastive studies.

I. LINGUISTICS AND OTHER DISCIPLINES GOALS AND METHODS OF INVESTIGATION

Like any science linguistics aims at knowledge, not just a common sense knowledge of the world, which is given to us in natural ways and the acquisition of which is the subject of cognitive psychology, but scientific knowledge, i.e., such knowledge that, given a phenomenon A, we are able to say of which general law is the occurence of A an instantaneous case.

Generally speaking one might distinguish three aspects of reality — physical, social, and psychological — and at least five moods of knowing reality (each distinct from the common sense knowing). These five moods, as they are enumerated by Henle (1969) are: humanistic, scientific, philosophical, mathematical and theological. Various disciplines, according to the aspects of reality they are interested in, approach their subject matter from the point of view of one of these moods. The nature of language, however, (its high abstractness, its social origin and functions, its individualistic uses) makes the position of linguistics among the other disciplines a little unclear.

Thus, although language is a social product and performs various functions in the human society, there is no reason to classify modern linguistics as one of the social sciences. Neither is the subject matter — the rules producing grammatical utterances — of any interest for the social scientist, nor are

---

P. *Zjedz to jablko, dobrze?*
E. *Wash yourself* (vs. *I wash myself, he washes himself*, etc.).
P. *Umyj się.* (vs. *Ja myję się, on myje się*, etc.)
The argument does not hold for Polish, because there are no tags in Polish and because the reflexive particle *się* is the same for all persons.

the messages conveyed by language and their social functions of any (except marginal) interest for linguistics. The methodological problems of the social sciences, such as the cultural relativity of its laws and the value-bias of the inquiry, are not shared by linguistics either.

If, on the other hand, language is analyzed in terms of human behavior (verbal behavior) as a product of the stimulus-response mechanism, it becomes the subject of psychological investigation. The behaviorist approach has been proved to interpret incorrectly the nature of the phenomenon of language. Transformational grammar is a strong reaction to the behavioristic treatments of language. The limitations of behaviorism as a method of explanation of human behavior have been severely criticized. With reference to language the main criticism was expressed by Chomsky, especially in his review of Skinner's *Verbal behavior*. In *Language and mind* (Chomsky 1972: 4) he states that

> The stimulus-response psycholinguistics or automata models for language use were demonstrated to be inadequate in a fundamental way — the structures which are realizable in terms of these theories are not those which must be postulated to underline the use of language.

From the non-behavioristic position the basic mistake of behaviorists is that they did not postulate any mental mechanism underlying organized human behavior, linguistic behavior included. The transformational theory of language assumes the existence of such an underlying mental structure common to all people. The study of language makes access to this mental reality possible. Thus, the linguistic theory is supposed to contribute to the general knowledge about the mental capacities of man rather than to the knowledge of his linguistic behavior.

Linguistics does not represent a humanist approach to language. Unlike, for instance philology, it is not interested in the individualistic traits in the use of language, but in all these properties which are common to all users of a given language, and further, in all these properties which define the notion of human language as such. The interest of a linguist in man is much more similar to that of a psychologist than of a humanist. And, certainly, linguistics does not apply the typical humanist method of 'verstehen' which was proposed to be applied in any discipline dealing with the human and the social as opposed to the material. This method based on the principle that we can understand the behavior of men by being able to share their "state of mind" can hardly be used as a scientific tool because it is not a method of verification[4]. Linguistics claims to be an empirical science and as such it aims at true statements by means of formulating testable hypotheses. Like any other empirical science it is a mixture of theory and observation, the transformational grammar is in fact highly theory-oriented. It has been criticized on this account on several occasions, the main point being that TG is overburdened with hypotheses and theoretical assumptions and too little attention is paid to making its criteria and methods more explicit, especially the criteria and methods of verification of its hypotheses[3].

---

[4] For a brief discussion of the method of 'verstehen' and its scientific value, cf. Abel (1953).

In the next section the main theoretical assumptions of TG are presented, based primarily on Chomsky's works. Since these assumptions are generally known we shall enumerate them briefly and later concentrate on some controversial issues.

II. MAIN THEORETICAL ASSUMPTIONS OF TG

1. The primary goal of the linguist is to describe the competence of the ideal speaker-listener. The descriptive counterpart of the speaker's competence amounts to *a theory*, hence the terms 'grammar' and 'the theory of language' are often used interchangeably.

2. The distinction between competence and performance and the emphasis on competence means that linguistics, like other sciences, works with *abstractions* in the sense that it does not attempt to give a mere inventory and classification of actual utterances, but it wants to find general laws according to which particular utterances are formed.

3. Linguistic theory deals with an ideal speaker-listener. This means that like other sciences linguistics makes *idealizations*. The basic idealistic assumption is that performance is a direct reflection of competence. The 'imperfections' of performance, such as the fact that actual discourse consists of interrupted fragments, are disregarded. As a result of this assumption the items that the transformational grammar generates are not utterances of which the actual discourses are composed, but they are items which the native speaker knows to be well-formed sentences of his language. As Hiż (1967: 68) puts it:

> ...linguistic laws are not mere generalizations of utterances — just as the theory of ideal gases is not realized by any actual gas or as geometry is not about the shapes or volumes of everyday objects.

4. Transformational theory makes three *basic assumptions about language*:

a. the set of sentences of a language is recursively enumerable and so are their respective relevant structures, hence the task of grammar is to provide a finite set of rules by which these two sets are recursively enumerated.

---

[3] Such was the criticism by Quine (1970).

b. for each sentence two basic levels of analysis have to be distinguished — the abstract deep structure and the surface structure of the sentences. The rules of grammar relate these two levels one to another.

c. formal properties of deep structures are common to all languages, so they need not be stated in particular grammars.

These properties form part of the notion of "human language".

5. Since, theoretically, sets of sentences of any language can be enumerated by more than one set of rules, the theory provides an evaluation measure: from a few competing grammars, each of which correctly accounts for the linguistic facts, the one to be chosen is that one which is also in accordance with the properties of universal grammar. If this condition is met, the grammar is said to have achieved explanatory adequacy.

6. The learning of a language is assumed to be closely connected with its structure. Chomsky draws a strict parallel between the language acquisition device and the model of generative grammar. The tasks of the linguist and the child are viewed as similar — to construct on the basis of primary data (such as sentences and non-sentences) a grammar which will generate infinitely many grammatical sentences.

> ... just as the problem of speech perception is in large part the problem of how the abstract underlying structure of a sentence can be inferred from a speech signal which is not isomorphic to it, so the problem of language learning is in large part concerned with how the child grasps the general character of the base structure, given that he has in experience only examples of structures derived from it (Saporta 1967 : 19).

7. Chomsky assumes that the child has some initial assumptions about the nature of language — innate schema — which allows him to select the proper grammar. To discover these innate principles is to discover linguistic universals. The two tasks:

a. to achieve explanatory adequacy in grammar and to contribute, thus, to the studies of human mental processes,

and b. to determine the abilities that make language learning possible under the empirically given limitations of time and data

are closely related one with the other.

8. Although linguists are interested in mental processes underlying speech, generative grammar is not to be treated as a *model of speech production* and its rules are not to be taken as rules corresponding to the mental acts which must be performed by an individual in order to utter a given sentence. Yet, as Chomsky emphasized in many places in his works, the development of transformational theory is a necessary prerequisite to any serious study of language acquisition and related psychological problems. Saporta (1967 : 21) makes this point clear:

While it is necessary to stress the logical differences between grammar and a model either of speech perception or of speech production, it is also worth pointing out their methodological interconnections. All other things being equal, one would wish for a model of the grammar that makes the simplest possible development of a theory of its application in speech perception and integration.

9. Transformational grammar claims to be a *realistic* theory (as opposed to the instrumentalistic position) and, thus, the question about the relationship of the theory to reality in terms of truth is a relevant one. The reality to which the linguistic theory refers is the mental reality underlying actual behavior. The statement that linguistic theory *is mentalistic* means that the theoretical entities employed by the theory, such as deep structure and transformations have observable effects outside the theory; for instance, they may have certain psychological consequences. Mentalistic claims made by linguistics are indirect and cannot be tested in their original form. If they are correct, it is possible to derive from them testable psychological hypotheses (Botha 1968).

10. The great interest in the problem of the acquisition of language and generally in the *acquisition of knowledge* is a characteristic feature of the transformational theory. The extreme position is taken by Chomsky who calls linguistics a branch of cognitive psychology (Chomsky 1972). As one of the goals of linguistics Chomsky sees the determining of the universal language independent constraints on semantic features, i.e. "the system of possible concepts" (Chomsky 1965: 159 f).

The relationship between language, on the one hand, and mental concepts and reasoning processes, on the other hand, is even more strongly emphasized by the representatives of the Generative Semantics view. Unlike Chomsky, however, they do not stress so much the role of innate ideas in acquisition of knowledge. Chomsky's *rationalistic* assumptions about innate schemata have been recently criticized by philosophers. We will return to this matter in section V of this paper.

11. As far as the *internal organization of grammar* is concerned, the theory was changed several times since the publication of *Syntactic structures* in 1957. The most crucial changes were the following ones:

a. the incorporation of the semantic component into transformational grammar,

b. the acceptance of the requirement that transformations preserve meaning and the replacement of the previously optional transformations, such as transformations forming questions, imperatives, and negative sentences, by obligatory transformations,

c. the change of a generative-syntax to a generative-semantics approach and the identification of the deep structure of the sentence with the logico-semantic representation,

d. the shift of emphasis from the problem of formalizing grammatical rules to the problem of demonstrating the correctness or incorrectness of specific structural descriptions.

III. MAIN METHODOLOGICAL PRINCIPLES OF TG

1. Data in TG

Data for linguistics are physical events — sentences and non-sentences — together with the native speaker's intuitions about these events. These data are taken either directly from the corpus or they are arrived at by linguists by means of manipulation with sentences. The intuitions about the sentences are expressed in terms of such pre-theoretical statements as: "repetition", "ambiguous", "paraphrase", "grammatical", "ungrammatical", "meaningless", etc. Introspective evidence plays an important role in TG. The intuitional criteria are regarded to be sufficient. Chomsky, for instance, considers the replacement of the criteria based on intuition by operational ones to be unnecessary. In the chapter "Linguistics and philosophy" of his *Language and mind* (Chomsky 1972 : 186) he states:

> I have no doubt that it would be possible to devise operational and experimental procedures that could replace reliance on introspection with little loss, but it seems to me that in the present state of the field this would simply be a waste of time and energy. Obviously, any such procedure would first have to be tested against the introspective evidence.

2. Argumentation in TG

There are two main immediate goals for linguistics: postulating deep structures for sentences and discovering rules which relate these deep structures to their corresponding surface structures. The basic principle according to which the analyst should proceed in order to succeed was formulated by Katz and Postal (1964 : 157) and, with some slight modification, is still retained. This principle is the following one:

> Given a sentence for which a syntactic derivation is needed, look for simple paraphrases by virtue of synonymous expressions; on finding them construct grammatical rules that relate the original sentence and its paraphrases in such a way that each of these sentences has the same sequence of underlying P-markers.

The identity of meaning between sentences used in such analysis is of great relevance. Some formal co-occurrence relations shared by two constructions do not provide a sufficient basis for assuming one common underlying structure for both of them. For the purpose of illustrating this point let us recall the treatment of imperative sentences in early TG.

In the early approach the assumption was made that an imperative sentence such as 1:

1. *Eat it.*

has the underlying structure *You will eat it*, because the entity *you* occurs in imperative reflexives (*Wash yourself*) and both *you* and *will* are present in the tag questions added to imperatives (*Eat it, will you?*). Katz and Postal (1964) observed that although declarative future sentences and their corresponding imperative sentences have related meanings, these meanings are not the same. They found it incorrect that two sentences with different meanings should have the same deep structure. In their new treatment of imperatives, sentence 1 is paraphrased as: *I request that you eat it*. This paraphrase is assumed to be a correct approximation to the deep structure of sentence 1.

The new hypothesis about the deep structure of imperatives is better than the old one, not only because the requirement of the same meaning of the deep and surface structure is met but also because this hypothesis has greater explanatory value. It explains some other grammatical phenomena related to imperatives such as the non-occurrence of stative verbs in the imperative and the ungrammaticality of imperative sentences with some sentence adverbials. These co-occurrence restrictions are shared by imperatives and the request constructions, and they are not shared by imperatives and the you-will-constructions as sentences 2 - 7 demonstrate:

2. **Want to do it.*
3. **I request that you want to do it.*

But 4. *You will do it.*

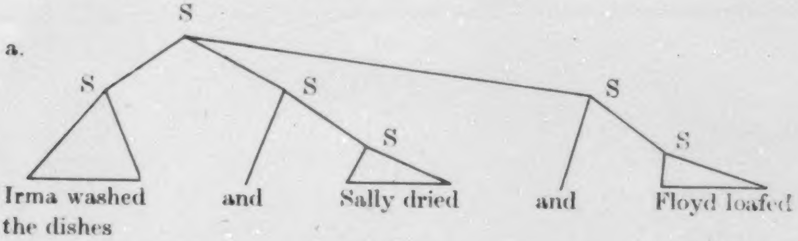
5. **Maybe drive the car.*
6. **I request that maybe you drive the car.*

But 7. *Maybe you will drive the car.*

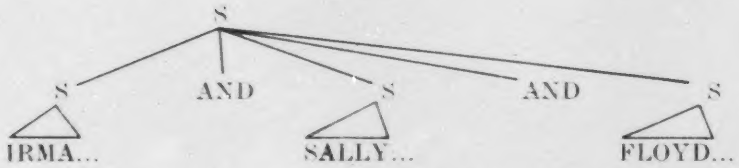
Another type of grammatical argumentation may be illustrated by Ross's discussion of the deep structure representation of conjunction (in Ross 1968). He argues that structure *a* and not *b* ought to be taken as a correct representation of some deeper level in the derivation of a sentence like 8:

8. *Irma washed the dishes, and Sally dried, and Floyd loafed.*

a.

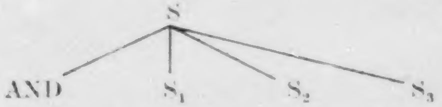


b.



Ross assumes that the initial underlying structure of sentence 8 is something like c:

c.



This structure is changed to structure *a* by a rule of conjunction copying which copies the conjunction and Chomsky adjoins it to S_1, S_2 and S_3.

The syntactic reasons for choosing structure *a* rather than *b* are the following ones:

1. When the conjoined sentence is broken into two sentences, the conjunction is attached to the second sentence:
   9. *John left and he didn't even say good-bye.*
   10. *John left. And he didn't even say good-bye.*
   11. **John left and. He didn't even say good bye.*
2. In languages in which enclitics can replace coordinating conjunctions (-que in Latin, aber in German) these enclitics are always inserted into the second conjunct:
   12. *Sie will tanzen, aber ich will nach Hause gehen.*
   13. *Sie will tanzen, ich will aber nach Hause gehen.*
   14. **Sie will aber tanzen, ich will nach Hause gehen.*
3. Intonation pauses occur before coordinating conjunctions:
   15. *Tom and Dick, and Harry, all love watermelons.*
   16. *(Tom) (and Dick) (and Harry)...*
   17. **(Tom) (and) (Dick) (and) (Harry)...*

Arguments similar to the two quoted above are numerous in linguistic literature. An already classical argument concerning the deep structure of sentences with instrumental adverbs (Lakoff 1967) was analyzed in detail by Botha (1968). He proved that the form of grammatical argumentation is a methodologically valid solution of the problem of the confirming and disconfirming of hypotheses about structural descriptions of sentences.

3. Testing of hypotheses in TG

Since the hypotheses about deep structures and the rules relating deep structures to surface structures do not refer to observable phenomena, their testing is indirect. From these hypotheses statements about observable phenomena, i.e. sentences of the language, are inferred. The deep structure and the derivational rules are said to be correct if the derived structure is judged to be a grammatical sentence of a given language. Thus the linguistic intuition of the native speaker is the final and decisive criterion for testing grammatical hypotheses.

As an example of testing linguistic hypothesis we will consider here Lakoff's argument about the deep structure of sentences with manner adverbials. (Lakoff 1970 a). Lakoff's hypothesis is that sentences such as 18 have an adjective as the highest predicate in the underlying structure.

18. *I beat my wife enthusiastically.*

The derived hypotheses are the following ones:

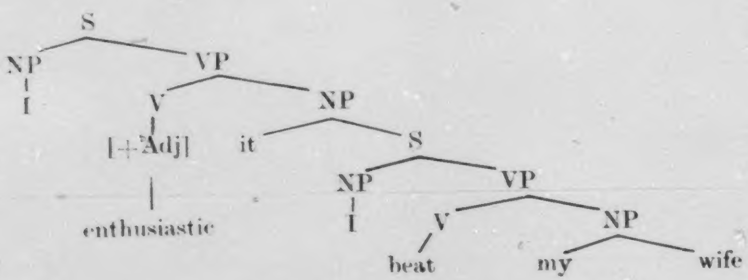
1. If sentence 18 has an adjective instead of an adverb in the underlying structure, then it should be synonymous with sentence 19:

   19. *I am enthusiastic in beating my wife.*

2. if the adjective replacing the adverb of manner in the underlying structure is the highest predicate, then it should be this element which is questioned and negated, i.e., sentences 20 and 21 should be synonymous with 22 and 23 respectively.

   20. *I don't beat my wife enthusiastically.*
   21. *Do you beat your wife enthusiastically?*
   22. *I am not enthusiastic in beating my wife.*
   23. *Are you enthusiastic in beating your wife?*

Since the predictions about the synonymity of sentences in both cases are confirmed by the intuition of the native speaker, the following underlying structure is posited for sentence 18[6]:



Quite independent evidence for the correctness of a linguistic hypothesis may be provided in some cases by experimental psychology. The transformational approach to language inspired many psychologists and psycholinguists with new ideas — methods and goals of experimentation with the linguistic behavior. Underlying the earliest investigations of psycholinguists working within the framework of TG was the so-called "correspondence hypothesis", according to which "the sequence of rules used in the grammatical derivation of a sentence corresponds step by step to the sequence of psychological processes that are executed when a person processes the sentence" (Hayes 1970 : 5). The majority of these experiments were designed to find out whether performative complexity mirrored competence complexity and whether the theoretical linguistic constructs, such as transformations, had psychological reality. The reasoning employed here had the following form: if claim x about the structure A or operation B was correct, then the reaction of the subjects to sentences with structure A or operation B should be such and such. This reaction was supposed to reflect the perceptual difficulties of the subjects.

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[6] The presentation of the whole argument is simplified here.

The results of some of these experiments were summarized by Fodor and Garrett (1966). The experiments with the passive, negative and interrogative appeared to confirm the existence of these transformations. There were, however, also many experiments which gave negative results, i.e., the performance measures of sentence complexity did not correlate with the derivational history. For instance, agentless passives turned out to be easier to perceive than full passives, although according to the linguistic theory, an additional transformation, deletion, had applied. The lack of agreement between the grammatical theory and the results of the psycholinguistic investigations caused some scepticism among the psycholinguists. The correspondence hypothesis was abandoned. One reason for its rejection was that it was wrong from the very beginning, because it made an assumption that grammar is a kind of a performance model. This assumption was not only never made by transformational linguists, but even strongly opposed by them. The other reason for the failure of these experiments was that they were performed too early; many of them were based already on the *Syntactic structures* model, i.e., even before transformational theory had managed to work out its basic assumptions.

There is also another aspect to psycholinguistic investigations. When the correlation between derivational processes postulated by linguists and perceptual processes observed by psycholinguists was examined more closely, it turned out that some derivational constraints were in fact perceptual, that is, not grammatical. This idea was first expressed by Bever in his paper "The cognitive basis for linguistic structure" and later developed by Grosu (1971). Grosu argues that, for instance, Lakoff's transderivational constraint which blocks the formation of unacceptable sentences such as 24:

24. *John and Bill entered the room, and hé took off his coat.*

is a perceptual constraint of the following form:

> Sentences containing pronouns are incomprehensible if the antecedent pronoun cannot be discovered by any means whatsoever, or if there are two or more equivalent candidates for the position of antecedent (Grosu 1971 : 146).

He adds that for the recovery of the antecedent any piece of information shared by both the speaker and the hearer can be used. For instance sentence 25:

25. *John and Napoleon entered the room, and he said he was going to make war on Russia*

is comprehensible on the basis of extralinguistic knowledge possessed by the hearer.

The problem of the use of experimental psychology for testing linguistic hypotheses is controversial, because although on the one hand linguists claim that their rules and structures should have psychological relevance, on the other hand the access to the psychological processes accompanying the speech production is extremely difficult, especially if we take under consideration that the experimenter has to rely almost exclusively on the statements of his subjects.

4. Criteria for evaluating the theory

As it was already pointed out above, the highest valued theory is the one which gives a basis for selecting one of the few competing descriptively adequate grammars. The evaluation of individual grammars depends, on the one hand, on the simplicity of description which involves generalizations, and, on the other hand, on the criterion of linguistic intuition which determines which generalizations about language are significant. No definite simplicity measure has been devised for any science so far; but Chomsky (1965), prematurely, as it seems, suggested that the length of rules, i.e. number of symbols appearing in the rules of grammar, should be taken as such a measure. The problem is not quite that simple, because a theory can be evaluated according to several different kinds of simplicity, such as logical, epistemological, semantical and notational. These criteria do not always coincide; for instance, notational simplicity, i.e. economy in using symbols, is achieved at the cost of higher semantical complexity, because the fewer symbols used, the greater their semantic content[7].

The principle of generalization reminescent of Occam's principle — "Frustra fit per plura quod potest fieir per pauciora" (what can be explained by assumption of fewer things is vainly explained by the assumption of more things) — is the dominant factor in the considerations of which rules are better in the theory. It is not only the problem of economy of description but an empirical matter too, because only those generalizations are accepted which reflect the native speaker's intuitions about the phenomena under consideration. Actually, of the two criteria for a linguistically significant generalization: conflatability of rules and the psychological validity of such generalizations — the latter one is difficult to prove, because some of the psychological observations undermine well accepted linguistic generalizations.[8]

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[7] For the various types of simplicity and their mutual relationship, cf. Bunge (1963).

Postal's (1971) analysis of the English verb *remind* is an excellent example of the application of the principle of generalization in linguistics. Postal states that exceptions ought to be looked at as composita of regular cases, so that no special rules will have to be devised to account for them, but the rules already needed in the theory will be sufficient. Accordingly, he treats the otherwise unique verb *remind* as a composition of two semantic components *strike* and *similar*, because *remind* shares some of its syntactic features with *strike* and other features with *similar*. The features that *remind* has in common with *strike* are also features of a larger group of verbs, such as *seem, appear, impress, taste, perceive*, and also the features of *similar* are shared by a whole class of verbs (*resemble, like, identical, different*). Thus the rules which are necessary to derive sentences with *remind* are the same as rules necessary for the derivation of the sentences with these two classes of verbs, if we accept the *strike-as-similar* analysis.

The principle of generalization forbids the same rule to be stated twice in the theory. The following statement of Lakoff, with which he backs his conclusions that the rules of grammar and the rules relating surface forms to their corresponding logical forms are the same, is characteristic:

> It should be noted that both of the above conclusions depend upon a form of argumentation upon which just about all of the linguistics of the past decade and a half depends, namely, that if a given theory necessarily requires that the same rule be stated twice, then that theory is wrong. Not just inelegant, but empirically incorrect (Lakoff 1970 b : 159).

IV. PHILOSOPHICAL VIEWS OF LANGUAGE RELATED TO TG

It cannot be denied that modern linguistics took over many ideas from philosophy and logic and that many of its considerations aim at solving, if not directly than indirectly, certain philosophical problems. The two basic questions that philosophers ask about language are:

1. What is the relation of language to reality?

   and a related question:

2. What is the relationship between language and the human systems of knowledge?

In earlier philosophy knowledge and language presented no real problem — they were simply manifestations of reality. For instance, the authors of *De modis significandi* (Modistae) thought that there was essentially one grammar which reappeared in individual languages with some modifications. The philosopher could know the details of this grammar by simply considering the ontological nature of things (Küng 1967: 23). The problem of mediation of human mind was neglected in this approach.

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[8] However, Prideaux (1971) devoted his article to proving that 'linguistically significant generalization' is not an empirical concept, but purely formal. If this turns out to be true, it means that criteria for evaluating grammars are also only formal.

The old approach of philosophers was that of synthesis. The crucial problem was building up a world-picture out of some basic elements. Man's view of the world and his language were considered to be determined by experience. The outer world was regarded to be the cause of any experience and of any concept. The new approach is that of analysis. Philosophers are interested in breaking down the world-picture by progressive, logical analysis of language to its elementary basis (McKinney 1971). It is expected that the elementary units of language will lead the analyst to the structure of reality and the functioning of the human mind. In order to attain this goal ordinary language has to be translated into a logical form.

Leibnitz was the first philosopher to think about basing philosophy on a logistic analysis of language. He speculated about an ideal symbolic language which was to be used for the formulation of the principles of all human knowledge.

From modern philosophers the most interesting thoughts about language are those of Wittgenstein contained in his *Tractatus*. According to him there is a constant relationship between language and reality such that a sentence, or rather its logical form, is a picture of reality:

> The configuration of objects in a situation corresponds to the configuration of simple signs in the propositional sign (Wittgenstein 1921 : 3. 21).

For Wittgenstein the logical form is not merely the syntactic form of sentences, but it mirrors the ontological form of the world of facts. (Analyzing the structure of language he came to the conclusion that the world is a collection of facts, not things)[9].

Russell did not go as far as Wittgenstein, but one of his views on language is that languages reflect various presuppositions people have about the world. For instance, the duality of subject sign and predicate sign reflects an ontological categorizing into substance and attribute. In "Logical atomism" he argued that Western philosophy grew out of the idiosyncrasies of the syntactic structure of the Indo-European languages (Russel 1924)[10].

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[9] About Wittgenstein's views on language, among other sources see Küng (1967), and MacKinnon (1969).

[10] There is undoubtedly some influence of the native language of the philosopher upon his theory. An interesting example of this phenomenon is quoted by Küng (1967) with reference to Leśniewski's ontology. Leśniewski, unlike other philosophers, did not distinguish between names which can stand before *est* and those after *est*, because Polish, unlike English or French, has no definite article. Hence, sentences: *Sokrates jest człowiekiem* and *Sokrates jest Sokratesem* are not grammatically different, whereas *Socrates is a man* and *Socrates is Socrates* are different.

Another modern philosopher, Quine (1960), expresses the view (in *Word and object*) that language interprets sensory data and that the pre-theoretical character of objects is illusory. Theories of interpretation are embedded in linguistic structures. Explanation of the problem of human knowledge can be achieved only by means of the clarification of the way in which linguistic systems develop, are structured, and function. McKinney (1971) has a similar opinion. Knowledge is based on the data of sensory experience, but language gives rules of interpretation for these data.

> The word is the point of contact between discontinuities and indeterminancies of elementary individual experience and the body of common experience we call reality (McKinney 1971 : 39).

Like Quine, he argues that we cannot know Reality in itself but only a man-made conceptual scheme (and knowledge is a conceptual scheme shared by all members of a given community).

In order to answer the question "What are the basic constructs of our knowledge?" philosophers try to find the primary elements in ordinary language. The question is whether the primary language is an object language, i.e., whether the words of this language name things. This question was pursued by Russell (1940) and also by Laszlo (1965). According to Laszlo the problem of primary language is equal to the epistemological problem of "whether ordinary sense-objects are given in perception or are constructs from materials so given" (Laszlo 1965: 160). Questions about human cognition, similar to those asked by philosophers, are also asked by modern linguists, although the answer to them is not their immediate goal. The search for universal semantic primes may prove helpful for the solution of some philosophical dilemma. It cannot be also overlooked that some of the conclusions about natural language drawn by logicians and philosophers, especially from the school of Logical Atomism, recur in the transformational theory. For instance Russell's (1924) observation that there is no such entity as *Plato's love for Socrates* but only the fact that *Plato loves Socrates* underlies transformational approaches to constructions of this type.

V. CONTROVERSIAL POINTS IN THE THEORY OF TG

1. Intuition and grammaticality

Intuition of the native speakers about their language plays a very important role in linguistics, because intuition is used both in providing data and as a final criterion of the correctness of the theory. This "high" status of intuition in linguistic theory has often been questioned. The first problem which arises in this connection is whether the facts about language discovered by linguists can be considered to be objective. Reformulated, this question has the following form: "Can linguistics be regarded as a real science if it relies to such an extent on introspective evidence?". Chomsky's opinion is that the solution of this problem depends on the decision whether the important feature of science is objectivity or a search for insight. According to him, insight is more important than objectivity and, as an example, he quotes behavioral sciences which were not very successful in spite of the emphasis on objectivity (Chomsky 1965: 20). We can leave the problem of what is the important feature of science aside (and it seems that both features are equally desirable) because the real problem with intuition is whether we can assess the intuitions of the native speakers with the methods used so far, i.e., asking the subjects if a given sequence of words is a grammatical sentence, a paraphrase of some other sentence, etc. Judgements about grammaticality are subject to all sorts of confusion between grammaticality, acceptability and intelligibility. One of the problems involved here is that linguistic intuitions vary in their sensitivity according to the degree of education of the informant. Somewhere low on such a scale is a man who rarely has contact with the written language and whose judgements are based on conversational language in which complete grammatical sentences are relatively few. The opposite case is represented by professional linguists, who not only are better prepared to distinguish between grammatical and ungrammatical sentences, but who can also see problems which would never arise in the mind of an average man from the street. Thus, linguists may assign an ambiguous sentence four different readings in cases where ordinary people are aware of only one or two of these readings. They will also be more careful in judging which two sentences are paraphrases, because on second thoughts their scientifically trained minds are likely to decide that no two different sentences have exactly the same meaning.

The second problem, strictly connected with the one discussed above, is that there are no precise criteria for determining what "grammatical", "paraphrase", "nonsensical", etc., actually mean. Linguists presuppose that they and their subjects have a theoretical vocabulary in common; but such a precondition is usually not the case (unless the analyst asks himself the questions about the grammaticality or his colleagues from the linguistic department, which is a widely accepted practice). Usually when the linguist asks "Is this sentence grammatical? "the asked person answers according to what he understands by "grammatical" and not according to the linguist's sense of the term. In connection with this problem Fillmore observes that:

> ... it is difficult to see how a generative grammar can demarcate all and only the grammatical sentences in view of rather serious questions about the empirical determinability of that set (Fillmore 1970 : 15).

An interesting experiment designed to check the native speakers' sense of grammaticality was performed by Tikofsky and Reiff (1970). College students were asked to rank fifty pairs of grammatically deviant strings. Five grades allowed the evaluation of the string on the scale from complete acceptability to complete unacceptability. The results of the experiment showed that:

1. Many strings were given all five marks,
2. *There was no string which received the same rank from all subjects,*
3. Individual subjects were remarkably consistent in their ranking.

Below I quote a few strings which were not given the "completely unacceptable" mark by anyone in this group and which were judged to be completely acceptable by some students:

Peter jobs less man
Green primarily especially wood
Classes beyond with green
Group seven simply green

This points to the existence of different criteria used by people to judge acceptability. Some of these criteria, according to Tikofsky and Reiff (1970) might be:

1. degree of situational adequacy,
2. similarity to some string to which the subject had previously responded,
3. the easiness of interpretation of a given string.

Not only are intuitions of native speakers often in conflict, but very often they must be prompted. For instance, if it is difficult for the subject to see the ambiguity of a given sentence, the linguist is forced to paraphrase the sentence so that the other reading becomes more obvious. The ambiguity of sentence 26 can be shown by the existence of two different passives corresponding to each reading of the sentence (Saporta 1967):

26. *He is reading a letter to his mother.*
27. *A letter to his mother was being read by him.*
28. *A letter was being read by him to his mother.*

We shall conclude the discussion of the use of intuition in linguistic science by quoting two characteristic statements on this subject. The first quotation is taken from an article by Mason and Peterson (1967); the other one is from Bever (1970).

> Although recent works by Chomsky (1965), Katz and Fodor (1964), and Katz and Postal (1964) deal at length with proposals for the organization of linguistic descriptions, they fail, however, to solve the rather serious problem of finding criteria for deciding which strings over the alphabet of a given language should be considered sufficiently well formed to require that they be included in a linguistic description of the language (Mason and Peterson 1967 : 108).

> Linguistic intuitions do not necessarily directly reflect the structure of a language, yet such intuitions are the basic data the linguist uses to verify his grammar. This fact could raise serious doubts as to whether linguistic science is about anything at all, since the nature of the source of its data is so obscure. However this obscurity is characteristic of every exploration of human behaviour. Rather than rejecting

> linguistic study, we should pursue the course typical of most psychological sciences; give up the belief in an "absolute" intuition about sentences and study the laws of the intuitional process itself (Bever 1970: 346).

2. Competence

The assumption of TG that grammar is a description of the native speaker's intrinsic knowledge of his language has also been criticized on several occasions. First of all, it is not clear what it means that a speaker knows his language. According to Chomsky it means that the speaker has an unconscious knowledge of the rules of grammar which he uses in performance. If so, argues Harman (1967) then the relation of linguistic behavior of a man to his knowledge of the language is comparable to the relation of the skills of a bicycle rider to his knowledge of principles of mechanics.

> We might imagine that a model of a cyclist would contain representations of the relevant principles of mechanics and that it uses these principles in calculating what needs to be done so as to retain balance. Then, following Chomsky's model, we might say that the cyclist has an internal representation of the principles of mechanics. Should we go on to say that every cyclist has an intuitive or tacit knowledge of the principles of mechanics? This does not seem an illuminating way of talking about cyclists; and Chomsky's remarks about "tacit competence" do not seem to provide an illuminating way of talking about speakers of a language (Harman 1967 : 81).

The knowledge of the language, i.e. linguistic intuition, is reflected in the speaker's judgements about grammaticality. These judgements, according to Harman, reflect the knowledge of the output of the internalized grammar rather than the knowledge of what Chomsky calls competence.[11]

From a different point of view Chomsky's assumptions about grammar are criticized by Quine (1970) in his article "Methodological reflections on current linguistic theory". Quine distinguishes behavior fitting some rules from the behavior guided by rules and argues that for Chomsky speech is a kind of rule-guided behavior, i.e., speakers know the rules and it is possible for them to state these rules. The goal of the linguist is not to find the rules which the behavior fits, but rather the rules that are implicitly present in the minds of the native speakers. Quine (1970 : 387) finds rule-governed behavior not as controversial as the following feature of the theory:

> ... it imputes to the natives an unconscious preference for one system over another, equally unconscious; which is extentionally equivalent to it.

Quine's concern here is a methodological one: how can a linguist tell that what he proposes as deep structure is in accordance with the native's analysis and not an extentional equivalent? Because of inexplicit criteria in linguistics there is no way of deciding it. Quine suggests an alternative solution: of two extentionally equivalent grammars the one that is simpler and more convenient is to be chosen. Such a procedure is obviously against Chomsky's insistence on the psychological relevance of the results of linguistic investigations.

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[11] Chomsky answers Harman in *Language and mind* (1972). The basic point that he makes about the "bicycle rider parallel" is that, unlike bicycle riding, language is not a skill or habit.

For Chomsky the grammar constructed by linguists depicts the grammar internalized in the native speaker. According to him, linguistic grammar is the same as mental grammar. Deep structures and intermediate structures are expected to have an existence on the basis of the principle of the isomorphism of the model with the thing. If the output of the model corresponds to the observed phenomena and predicts the yet unobserved phenomena correctly, then the assumption is made that the various parts of the model correspond to some sort of reality within the phenomena which are analyzed (Starosta 1969 : 107). Thus, the linguist's grammar and the mental grammar differ only representationally — the first is an axiomatization of the latter one. There are, however, strong tendencies among psycholinguists to distinguish these two grammars.

According to Watt (1970) mental grammar is not a linguistic grammar but rather abstract performative grammar. His hypothesis is based on the fact already mentioned in this paper that there are many discrepancies between performative complexities and complexities of the grammar postulated by linguists. The experimental analyses of speech perception prove that many sentences which involve many derivational steps are simpler to perceive than those which are simpler from the linguists' point of view. For instance, sentences 29 and 30 are easier to perceive than 31 and 32[12]:

29. *The tired soldier fired the shot.*
30. *Mary grows the flowers.*
31. *The soldier, which soldier was tired, fired the shot.*
32. *Mary causes the flowers to grow.*

It was also proven that sentences of greater performative simplicity are learned earlier by children and that generalizations that children make about language are of a different kind that those made by adults and those postulated by linguists. Truncated passives, for instance, are included by children with the class of simple predicate-adjective sentences rather than with passives. Watt (1970 : 187) comes to the following conclusions:

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[12] Watt seems to repeat the old mistake of confusing TG with performance model. Apart from that, the easier perception of sentences 29 and 30 is caused by the fact that they are sentences which people hear and use; whereas, 31 and 32 are sentences which they have never heard or produced. In languages in which adjectives function as modifiers only in relative clauses and in languages in which causatives are expressed in a periphrastic way, as in 32, 31 and 32 are easier to comprehend.

> ...The chief difference between CG (competence grammar) and APG (abstract performative grammar) boils down to this: the CG puts a premium on overall economy and so makes all significant generalizations; and APG puts a premium on economy of derivation of individual sentential paradigms and so balks at incorporating some of these generalizations.

Important as Watt's remarks are for psycholinguistics, his criticism of the identification of Linguistic Grammar with Mental Grammar is valid only if Mental Grammar is understood in the narrower sense, as a collection of rules corresponding to the speaker's sequence of mental processes occurring during the individual acts of speech production. The mental reality which linguists hope to discover is of a different kind; it involves cognitive processes relating human sensual contact with the outside world and the units of language. There is, however, no doubt that many features of language structure are determined by the use of language in speech acts. The actual use of language depends on such factors as memory span and the general organization of human memory. As Bever (1970 : 280) points out:

> Linguistic structure is itself partially determined by the learning and behavioral processes that are involved in acquiring and implementing that structure.

There is one more problem with the grammar understood as the account of the native speaker's competence. If grammar is the description of the competence, then the set of sentences that it generates must be the same as the set of sentences in language. According to Fillmore (1970), the requirement that grammar be a complete description of the competence is incompatible with certain features of natural language[13]. He exemplifies this statement with the case of tag-questions. The general rule for tags fails to cover all cases of their use. For instance, a sentence such as 33 may have either *a*, *b*, or *c* as tags, because native speakers use any one of them:

33. *Somebody's out there,*
    a. *isn't there?*
    b. *isn't he?*
    c. *aren't they?*

None of these tags is consistent with the general rule of tag formation. Similarly, the subject-verb agreement cannot always be determined by a general rule:

34. *Either he or I* $\left\{\begin{matrix} am \\ is \end{matrix}\right\}$ *always on duty.*

Fillmore proposes that grammar should be incomplete just in such a way as to allow an accounting for cases like 33 and 34.

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[13] Cf. Fillmore (1970: 16), especially the following statement:
When grammar construction is seen as a purely formal task, one of the desiderata of a grammar must be its completeness. In evaluating a grammar which is to generate all and only the sentences of a language, we cannot tolerate a situation in which symbols are introduced at one point and never interpreted or operated on by later rules. It is possible, I want to suggest, that a grammar which exhibits the workings of a natural language cannot meet such a requirement.

3. Universals.

The issue concerning the status of universals in linguistic theory is of special significance for CA. Problems connected with universals can be divided into four groups of questions:

1. What are the universals? How deep should the linguist look for them? Can all common features of languages be called universals?

2. In what way should the theory of restricted in order not to allow the establishment of common features of languages by means of a mere manipulation with rules and symbols?

3. What is the significance of finding linguistic universals? Should not they be used only within the linguistic theory in order to distinguish universal grammar form individual grammars? How relevant (if at all) are universals for the solution of problems of language acquisition and general cognitive processes? Can linguists go so far as to postulate innate ideas based on linguistic universals?

4. To what extent do the universals proposed by linguists reflect the universal constraints and mechanisms of language perception and learning? Can "real" linguistic universals be distinguished from cognitive ones, and how?

The complexity of the problem of universals has been appreciated only recently. In 1965 the task seemed to be much simpler. Universals were categorized into two qualitatively different groups — substantial and formal universals — and it was assumed that both types could be found in all three components of grammar. Universal phonetics, based on a fixed set of distinctive phonetic features, had the best results in this respect. The views on universal syntax and universal semantics have, however, changed considerably with the change of model from generative syntax to generative semantics and with the general development of knowledge about the complicated working of natural language. It is now obvious that words cannot be adequately analyzed in terms of such features as *animate*, *action*, *object*, etc., as it was assumed in the early approach to semantics. Nor can the semantic rules of language be analyzed independently of the syntactic rules. Linguistic theory must, for instance, provide a means for relating as synonymous two expressions such as 35 and 36:

35. *a good knife*
36. *a knife which cuts well*

It means that knife must be characterized, apart from other features, in terms of function and evaluation measure[14]. Traditional componential analysis of lexical items turned out to be insufficient for linguistic purposes. One of the objections to componential analysis is that the process of decomposition of meaning can be carried on almost without finding any stopping place.

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[14] Cf. Chomsky (1972), in section 'The formal nature of language'.

According to Fillmore (1971 a : 274), instead of the question "What is the meaning of this form" linguists should ask "What do the speakers need to know in order to use this form appropriately and to understand other people?" In order to answer the second question, it is necessary to analyze a word in all its contexts.

Recent investigations of linguists broadened the domain of linguistics by including within discussions such problems as topic, focus, presupposition, felicity conditions of utterances, possible lexical items, semantic primes, etc. The interest in some of these topics was dictated by an attempt to overcome Chomsky's sentence atomism by a systematic study of sentences in the context of other sentences and with reference to the speaker's beliefs and knowledge of the world. The discussion of these phenomena points also to a new direction in the search of universals.

Although the universal base hypothesis is the basic assumption underlying the study of languages, there are serious methodological problems connected with it. A strong version of this hypothesis, as proposed by Ross, Lakoff, McCawley et al., has the following form:

> In the transformational theory of grammar, the base grammar B will serve as the base component of a descriptively adequate grammar of any natural language (Peters and Richtie 1969 : 151).

According to Peters and Richtie (1969) and Peters (1970), the way in which this hypothesis is formulated allows for the discovery of many universal bases. This formulation is too general and makes it possible to arrive at two or more different transformational grammars which generate the same structural descriptions. An additional complication lies in the fact that different structural descriptions may have the same empirical consequences. For instance, Peters argues, the lexicalist vs. transformationalist controversy concerning the derived nominals cannot be solved by an appeal to the native speaker's intuitions:

> Linguistic intuitions of native English speakers can be captured equally well either way. Furthermore, nothing that is presently known about the manner in which general linguistic theory should project from simple data to grammar provides a basis for preferring one of these analyses. Thus, as it stands, transformational theory is inadequate to empirically determine what is the base component of the grammar of English (Peters 1970 : 36).

In Peters's opinion, this state of affairs is due to the weakly constrained nature of transformations. Many grammatical phenomena are explained by ways of mere manipulations with transformations. He gives the example of two different ways in which the underlying order of the same language can be analyzed. Bach (1962) postulated verb in the sentence final position in the underlying structure of German sentences. The verb was moved to the second position transformationally. Ross (1970), on the other hand, argued that SVO is the underlying order for German and that a special transformation moves the verb to the sentence final position in subordinate clauses. The problem is that there is no way of telling which analysis is better on the basis of linguistic intuitions of the speakers, because the intuitions concerning more abstract structures (if there are any such intuitions) cannot be checked directly.

Finally, along with the growing conviction that some of the linguistic universals may turn out to be cognitive universals, the theory should provide a basis for distinguishing between the Apparent Linguistic Universals and the Real Linguistic Universals[15]. McNeil proposes to execute this distinction in the following way:

> Weak Linguistic Universals have a necessary and sufficient cause in one or more universals of cognition and perception....
> Strong Linguistic Universals have a necessary cause in cognition or perception but because another purely linguistic ability also is necessary, cognition is not a sufficient cause (McNeil 1971 : 534).

According to him, this distinction is purely psychological. Linguistic theory points to the universal features of language without any consideration of the causes of these universals. The problem of the relationship between linguistic and cognitive universals has not been given much attention by linguists. One of the reasons is that too little is yet known about the universal features of languages.

4. Innate ideas

The classical doctrine of innate ideas, i.e., the theory that the acquisition of knowledge and language is based on the a priori species-specific principles, found a contemporary spokesman in Chomsky. Unlike any other linguist, Chomsky, with great persistency, refers to this theory in all his writings. According to him, the issue of innate ideas has a great bearing upon the direction of linguistic and psychological investigations. Chomsky's basic premises for postulating innate ideas are the following four:

1. The distinctive feature of human language is its creativity. This specific feature is lacking in animals which possess some systems of communication. The evidence from the studies of animal communication points to the fact that human language could not develop from more primitive systems of communication. Features such as emotive, propositional, and purposive, found in both human and animal languages, are not the distinctive features of language as such; they can characterize other activities such as, for instance, walking (Chomsky 1967).

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[15] Cf. Bever (1970 : 351) who states:

> There are many instances in which the "grammatical" structure of adult linguistic intuitions about potential sentences is influenced by mechanism of language perception and learning. The isolation of such cases suggests that there are universal constraints on the form of grammars which are not inherent to the statement of universal grammar itself, but rather the way in which grammar is learned and the use to which it is put.

2. Language acquisition takes place at the age when a child is hardly capable of anything else.

3. The data available for the child are only a small sample of the material that the child masters.

4. Language acquisition is independent of intelligence of the individual and of motivation.

Chomsky's conclusion is that each human mind is provided with an initial structure that enables a child to develop a highly abstract system of grammar from the data of senses. To discover this innate structure is the task of a linguist. Thus the main problem for linguistics is to develop a hypothesis about the initial structure that is sufficiently rich to account for the acquisition of language and which is not inconsistent with the diversity of existing languages. The basic assumption of this theory is that general features of language structure reflect not so much man's experience as the general character of his capacity to acquire knowledge. Thus, innate ideas or universals are conceived of as a highly restrictive schema which determines what counts as a linguistic experience. This initial schema is supposed to restrict a human language in a similar way as the phonological systems are determined by the choice of phonetic properties.

Chomsky maintains that postulating the existence of innate ideas is the best way of explaining a child's language acquisition. Two older psychological models failed to account for the ability to produce and understand novel sentences. One theory held that language learning consists primarily of the imitation of the utterances of elders. According to the second theory, language acquisition is best explained by the principle of reinforcement combined with imitation. Children emit utterances spontaneously, and then they are selectively corrected and reinforced by their parents. Neither theory explains the creative aspect of the human language.

In Chomsky's theory of language acquisition a child constructs a grammar of his language on the basis of primary data. As a precondition for this task a child must possess:

1. a linguistic theory that specifies the form of the grammar of a possible human language,
2. a strategy for selecting a grammar that is compatible with the primary linguistic data.

According to Chomsky, only "innate ideas" can explain the fact that a child prefers one specific hypothesis about grammar over other hypotheses also compatible with the data available to him[16].

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[16] Cf. Chomsky (1962, 1965, 1972). In *Language and mind* Chomsky mentions Peirce's ideas about the acquisition of scientific knowledge which are similar to his own. According to Peirce, the fact that in early science correct hypotheses were formed even on the basis of highly inadequate data points to the natural, innate ability of the human

If the theory of innate ideas is accepted, two questions will have to be answered:

1. What is the character of the stimulation that sets the innate mechanism into operation?
2. How did the human mind come to acquire this cognitive structure that is attributed to it?

These problems, however, are beyond the scope of linguistics.

Acquisition of language is a relevant part of the more general problem of the acquisition of knowledge. By postulating the innate mechanism which determines some cognitive processes Chomsky and other linguists following his ideas take a definite rationalistic position in the old empiricism versus rationalism controversy. According to the empiricist view, all that has to be attributed to the human mind in order to account for the acquisition of knowledge on the basis of primary data are some data processing mechanisms and inductive principles. Acquisition of language consists, then, in inferring the rules of grammar from the initially analyzed primary linguistic data.

The rationalist position is that apart from the peripheral processing mechanisms there are innate principles which determine the form of the acquired knowledge. This idea was developed by the thinkers to whom Chomsky constantly refers – Descartes, Port-Royal logicians, Leibnitz (his famous dictum, that learning is drawing out what is innate in the mind under specific conditions), and Humboldt (whose idea about language acquisition was that one cannot really teach language but only present the conditions under which it develops in its own way)[17].

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mind to construct correct theories. Peirce regarded inductive processes as marginal to the acquisition of knowledge.

There is also a close connection between Chomsky's theory of innate ideas and the views on human perception of the world of the Gestalt Psychology. Sense data do not determine our perception of objects. The whole picture of the world in the human mind is determined by some kinds of cognitive acts characteristic of the functioning of the human mind. The relationship between what humans perceive and what they have as given on the basis of sense impressions is highly arbitrary.

[17] The fact of Chomsky's frequent referring to these philosophers does not mean that his and their views on language are similar in each respect. He discusses only those of their ideas which are in agreement with his own views and often disregards their other views. The most evident case is that of Humboldt. Humboldt is not only known for his views on language learning and "innere Sprachform", but also of his relativistic views in the controversy about the relation of language and thought. Together with Herder, Sapir, and Whorf, he is on the opposite side to Chomsky's position in this argument. His view that different Weltanschauung of different peoples is due to extreme differences in the "internal structrue" of their respective languages is in apparent conflict with Chomsky's views about universals. A direct answer to the claims of the Sapir-Whorf hypothesis from the position of generative grammar is given in Lenneberg's "Language and cognition" (1971). Referring to empirical research connected with this problem, Lenneberg states that naming is a consequence of categorization rather than its cause. His final

Chomsky strongly opposes any empiricist account of the acquisition of knowledge. He criticizes at length Quine's views about language learning, although the latter introduces an a priori prelinguistic "quality space" principle. Even with this principle, argues Chomsky, Quine is incapable of explaining the generative property of grammar[18]. Chomsky's severe criticism of the behavioristic school is well known; however, his position in relation to the neo-behavioristic account of language learning is not known (at least not to me). For instance, Osgood's representational mediation theory includes an assumption about some innately given human cognitive abilities such as gestalt-like tendencies in perception or the principle of hierarchy in the organization of behavior. Osgood's argument proceeds along the line that, although principles like these mentioned above are innate and universal and are reflected in human languages, it does not mean that they are linguistic universals. It means, according to him, that they are universal cognitive features of men (Osgood 1971).

Both rationalists and empiricists might agree that some "innate capacity" has to be invoked in order to explain the mastery of language on the basis of highly insufficient data. The question is whether the mechanisms of segmentation, classification, and induction associated with the empiricist view are adequate for this task. Chomsky's answer is "no". His position has also been criticized. First of all, Harman states that Chomsky offers no real criticism of empiricism because whether the empiricist view is to be rejected as incompatible with the generative theory of language depends on how the principle of induction is defined.

> ... empiricism must be either specified so narrowly that it may be ruled out at the start without appeal to transformational grammar, or defined so loosely, in which case it turns out to be compatible with transformational grammar (Harman 1968 : 425).
>
> ... one cannot support rationalism by showing that only languages with certain types of grammar (e.g. transformational grammar) are learnable, since an empiricist could reply that this shows only that the principles of induction used (which must be biased in favor of some hypothesis) are biased in favor of the designed types (Harman 1967 : 86).

Apart from Harman, the innate ideas hypothesis was criticized by Putnam (1967), Hiż (1967) and Goodman (1967). The main points to which their arguments can be reduced are the following two:

1. There is nothing surprising in the fact that languages have certain

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conclusion is that: "... the cognitive processes studied so far are largely independent from pecularities of any natural language and, in fact, that cognition can develop to a certain extent, even in the absence of knowledge of any language" (Lenneberg 1971 : 553).

[18] For Quine's views, cf. Quine (1960). For the controversy between Quine and Chomsky, Chomsky (1969) and Quine (1969).

properties in common. The explanation of this fact does not require an appeal to innate ideas. The principles of universal grammar might, for instance, indicate only to common historical origin of languages (Hiż) 1967[19]. What is innate are only some learning strategies which enable both the acquisition of language and solving of mathematical problems (Putnam). The relative easiness of the first language learning can be explained if we take under consideration the fact that language is not the first symbolic system that the child acquires (Goodman 1952).

2. The hypothesis cannot be supported by empirical evidence, because it is too vaguely stated. Even if it were more exact, it could be supported only by indirect evidence. Goodman concludes his article with the observation that 'rather than facts crying for the theory, the theory is crying for the facts' (Goodman 1967 : 26). The empiricist hypothesis has hardly more empirical support. The issue requires more investigation on both sides.

VI. THE GENERATIVE SEMANTICS APPROACH TO LANGUAGE

It is generally agreed among linguists working within the classical theory as presented by Chomsky in 1965 that it is incorrect. The weaker claim is that the theory of 1965 is inadequate and has to be supplemented in various ways. Lakoff's theory of exceptions (1970 a), Ross's (1968) and Pelmutter's (1968) output conditions, Postal's (1971) cross-over principle, and Chomsky's (1971) surface structure interpretation rules are all attempts to improve and patch up the *Aspects* theory. Apart from inadequacies, many inconsistencies of this model have been pointed out. For instance, Weinreich (1966) observed that Chomsky's model contained a duplication in having a dictionary in the semantic component and a separate lexicon in the syntactic component. Thus, selectional features such as *human, animate,* etc., whose task is to block semantically deviant sentences, are repeated in both semantic and syntactic components.

The abandonment of Chomsky's model was initially caused by criticism of his deep structure. In the *Aspects* framework this level of linguistic analysis corresponded to the output of the base rules. In deep structure basic grammatical relations and selectional restrictions were stated and the lexical items already inserted. Structures meeting these conditions were viewed as the input to both the transformational component and the semantic interpretive component. The main objections to the so defined notion of deep structure raised by such linguists as Fillmore, Lakoff, McCawley, and others, who came to be known as generative semanticians, can be summarized as follows:

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[19] Such a hypothesis, as Chomsky pointed out when discussing the views of Putnam Goodman and Hiż, has no explanatory force (cf. Chomsky 1972 : 189). TG does not reject the claims that languages might have developed from one common language. There still remains to be explained why should a human language have features it has and not others.

1. The grammatical relations such as subject-of and object-of are not deep structure relations. This observation was pointed out first by Fillmore (1966 : : 21) who stated that:

> ...subject or object are not to be found among the syntactic functions to which semantic rules must be sensitive.

2. There is no reason why selectional restrictions should be treated as syntactic while they are, in fact, of a purely semantic nature. This argument is mainly due to McCawley (1968 a).

3. The co-occurrence selection occurs at a higher level of abstraction than Chomsky's deep structure. The first systematic attempt to prove this observation was Lakoff's analysis of instrumental adverbs. He gave a number of syntactic arguments for deriving two sentences such as 37 and 38 from one common underlying structure.

37. *John sliced salami with a knife.*
38. *John used a knife to slice salami.*

Lakoff showed that the instrumental adverb *with a knife* and the verb *use a knife* have the same selectional restrictions. Yet, sentences 37 and 38 would have been assigned two totally different deep structures in Chomsky's model.

4. Chomsky's assumption that lexical insertion was to be prior to every non-lexical transformation could not be kept because the derivation of some sentences would not be possible. For instance, items like *former* and *latter* have to be inserted relatively late, because they depend on the order of elements in the surface structure. In certain cases the possibility of performing certain transformations depends on the presence of specific morphemes, not just on their meanings, e.g., *for* is deleted after *want* but not after *desire* (McCawley 1968 a : 72):

39. *I want for you to win the prize.*
40. *I desire you to win the prize.*

The conclusion based on observations 1 - 4 and some further investigations of the matter was that in language semantic and syntactic phenomena cannot be kept apart and that a deep structure needed for the analysis of language is much deeper than Chomsky's deep structure. In the new approach the semantic representation of the sentence is considered to be its deep structure. This thesis has the following consequences for the construction of grammar:

1. The base component of the grammar generates semantic representations directly. The base rules function as node admissibility conditions (local and global), i.e., they specify which structures are the possible semantic structures of a human language.

2. The semantic representations are labeled trees rather than sets of markers. The elements occurring as terminal nodes of these trees are of two types: predicates (nouns, verbs, adjectives, prepositions) and indices.

3. The only types of rules needed for the derivation of surface structures from their corresponding semantic representations are transformations (pre- and post-lexical) and output constraints specifying what is a possible surface structure of a given language[20].

4. In the new model there are no projections rules. The former deep structure plays no role in this theory.

A semantic description of natural language presupposes the existence of some other — simpler language in which this description is to be carried out. Generative semanticians have decided that the language of logic can be used for that purpose. Logical formulae are supposed to present clearly and explicitly semantic relations which are present in the sentence but which may be unclearly and unsystematically expressed in the surface form. It is a well known fact that ordinary language in many cases disguises logical structure. As Wittgenstein pointed out in *Philosophical investigations*, most heterogeneous forms are forced into the same schema, such as *This paper is boring, The weather is fine, I am lazy*.

On the other hand, although the use of logical language guarantees a clear and unambiguous representation of the meanings of sentences, it is also obvious that, being created for the needs of mathematics, it may prove an insufficient tool for the analysis of natural languages. Natural language is not constructed according to pure principles of logic. As Suszko (1970 : 51 ff) observed, the structure of everyday language follows the pragmatical role of language (comprising the psychological, biological, and social phenomena) to an even larger extent than its referential role.

What the generative semanticians postulate is the use of the so-called natural logic. The logical form of a sentence is to be determined not only by the requirements of logic but also by linguistic considerations. According to Lakoff (1970 b), natural logic should possess these features:

1. It ought to enable better understanding of the relationship between grammar and reasoning.

2. Significant linguistic generalizations should be stated in this logic.

3. All concepts expressible in natural language ought to be expressible in natural logic.

4. Natural logic ought to be capable of accounting for all inferences made in natural language.

5. The sentential formulae of natural logic ought to consist of elements of an empirically determined set of predicates.

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[20] For a more detailed discussion of the structure of grammar in the generative model, cf. McCawley (1972).

> In natural logic, the operators and atomic predicates would not be chosen from an arbitrary vocabulary, but would be limited to those which could occur in the logical forms of sentences of natural languages. That is, they would be limited in part on empirical linguistic grounds (Lakoff 1970 b : 198).

The final goal of linguistics, according to the generative semantics view, is to find a simple natural logic for natural language in general. This goal is to be achieved by finding a limited number of elementary semantic units and the rules of their combinations into lexical items and entities of higher order — phrases, clauses, etc.

Generative semanticians claim that most of the lexical items of natural language are decomposable into more primitive concepts. For instance the verbs *kill*, *convince*, *persuade*, *lengthen* can be represented by means of more elementary predicates in the following way:

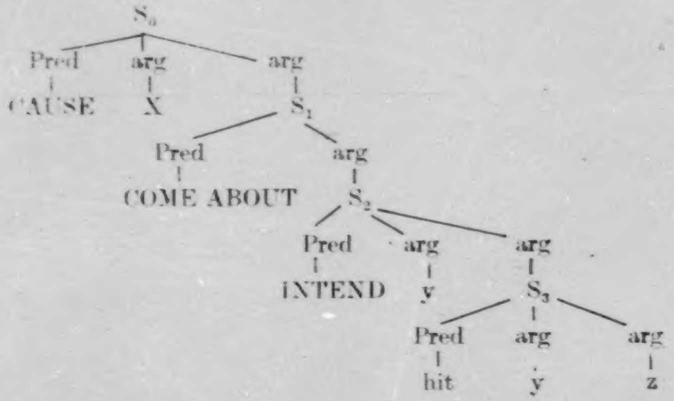
kill = CAUSE BECOME NOT ALIVE
convince = CAUSE COME TO BELIEVE
persuade = CAUSE COME ABOUT INTEND
lengthen = CAUSE BECOME LONGER

In accordance with this, an approximation to the semantic representation of a sentence type 41:

41. *X persuaded y to kit z*

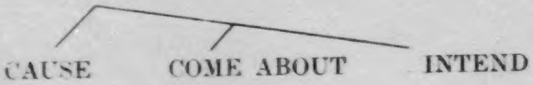
would be something like structure *a*:

a.



The elementary predicates of this structure (those in capital letters) are combined into one unit by means of predicate lifting transformation applied to S_2 and S_1. This transformation has the effect of adjoining a predicate to the next higher predicate. The resulting structure is shown as configuration *b*:

b.



Only now can the lexical insertion transformation replace this subpart of the tree with a lexical item *persuade*. The other transformations necessary for deriving sentence type 41 from structure *a* are Equi-NP-Deletion and Subject-Raising; both perecede the Predicate-Lifting.

According to Lakoff (1970 b, esp. 233), the recurring sentential operators such as CAUSE, SAY, BECOME etc., ought to function as atomic predicates in natural logic. These predicates do not vary from language to language and their hierarchical relations are also constant for all languages. Lakoff suggests that the hierarchy of atomic predicates which take sentential complements by represented by meaning postulates of the following form:

$$A\ (S_1) \supset B\ (S_1)$$

For instance, the relation between CERTAIN and POSSIBLE expressed in this way is:

$$\text{CERTAIN}\ (S_1) \supset \text{POSSIBLE}\ (S_1)$$

but not:

$$^{*}\text{POSSIBLE}\ (S_1) \supset \text{CERTAIN}\ (S_1)$$

The primary method of arriving at basic predicates forming semantic representation of sentences is based on paraphrases. The relationship between two sentences, one being the paraphrase of the other, is such that while the first one consists of fewer words, the second one is supposed to express the same meaning by means of more but semantically simpler words. Serious objections have been raised as to the synonymity of such pairs of sentences. Most of these objections, however, can be disregarded, because they refer to the notion of synonymity rather than directly to the method of decomposition employed by generative semanticians. First of all, in view of the fact that no satisfactory definition of synonymity has been worked out either by philosophers or by linguists, and in view of the fact that if there is a good definition like that of Goodman (1952), then no two expressions of the same language turn out to be synonymous, it is better to accept the solution offered by Goodman and speak about a high degree of "likeness" of meaning rather than any absolute synonymity (Goodman 1952 : 71).

It became quite obvious recently that there is more to the analysis of lexical items than merely to decompose them by means of paraphrase. All kinds of contexts in which a given word or phrase appear have to be taken under consideration. As Shopen (1972) points out, for the purposes of linguistic analysis establishing the logical equivalence of two sentences is not sufficient. Thus, although two expressions such as *bachelor* and *a man who has never been married* mean the same, i.e., if the sentence with one of them is true, then the same sentence with the other is also true, yet they are not interchangeable in all contexts. For instance, only 42, and not 43, can appear in context 44:

42. *John has never been married.*
43. *John is a bachelor.*
44. *— because he cannot stand the ceremony.*

43, in spite of its identical meaning with 42, cannot be accepted in the context of 44, because they differ as to the entailment. The expression ***has never married*** means that someone has not undergone the ceremony of marriage, and hence, ***the ceremony*** with anaphoric ***the*** is correct for 42. ***Bachelor***, on the other hand, only entails that a person to whom this word refers has not undergone this ceremony. Facts like this have to be accounted for in semantic representations.

A different example of contextual considerations in establishing semantic representations was provided by McCawley (1972 : 51). He gives a justification for treating *look for* as composed of two predicates: TRY and FIND. The TRY component of *look for* accounts for the fact that sentence 45 can have both a referential and a non-referential interpretation:

45. *Ernest is looking for a lion.*

Since *try to find* makes no commitment as to the existence of object of find, sentence 46 can be used by a person who does not believe that there are such things as unicorns:

46. *John is looking for a unicorn.*

Contextual analysis, as opposed to the simple decomposition of lexical items, brings into prominence not just any semantic components of a given item, but those which are relevant for the explanation of grammatical phenomena. Adverbs, for instance, have been found in numerous cases to modify a piece of the meaning of a given word, thus pointing to a specific borderline in the total meaning of the word. To illustrate this point we may consider sentence 47 discussed by McCawley (1972 : 73).

47. *I lent Harry my bicycle until tomorrow.*

Usually *until tomorrow* and the past tense of the verb are incompatible in the same sentence:

48. **I stayed in my room until tomorrow.*

The grammaticality of 47 can be explained only if we accept the fact that *until tomorrow* modifies only a part of the meaning of *lend*, namely that part which can be paraphrased as: "Harry possesses my bicycle"[21].

It is a matter of principle for generative semanticians that the semantic representation of lexical items be justified on syntactic grounds. A classical example providing syntactic arguments for the semantic representation is Postal's analysis of the verb ***remind*** as being decomposable into ***strike to be similar*** (Postal 1971). This article was an important contribution to the discussion about the choice between standard theory and generative semantics. Postal proves that standard theory, with its assumption that lexical items which occur in the surface structure are already present in the deep structure, cannot provide a proper analysis of *remind*. In order to account for a number of syntactic phenomena which occur in sentences with the verb *remind*, a deeper level of analysis must be postulated. This level corresponds to the semantic structure of "remind sentences". One of the conclusions that Postal (1971 : 225) draws from his analysis, which is relevant for the generative syntax versus generative semantics controversy, is the following statement:

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[21] As an approximation to the semantic structure of 47 McCawley (1972 : 73) proposes (diagram, p. 40):

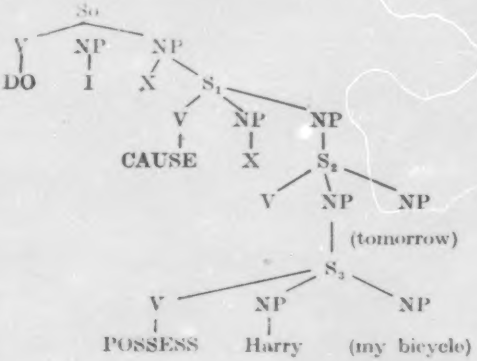
> There is thus ample basis for the claim that it is an empirical fact that as one follows transformational derivation in reverse, one moves in a direction of semantic relevance, not in some arbitrary direction. This, I emphasize again, is an empirical fact, and one which does not follow as such from the definitions of transformation and transformational derivation.

The claim of generative semanticians that the semantic structure of a sentence can be presented as its logical form, i.e. in terms of predicates, arguments, quantifiers, needs justification with respect to two points which have not been discussed here yet:

1. How do we know that rules relating logical forms to surface structures are grammatical rules (transformations).
2. Although it is known that the generative semantics theory can explain a wider range of language phenomena than the standard theory, how can it be shown that the new analysis is better than the old one with respect to these phenomena which seemed to be successfully accounted for in the standard theory?

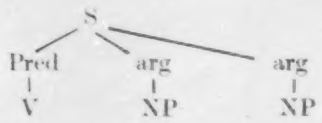
An explicit answer to the first question was given by Lakoff (1970b) in the article "Linguistics and natural logic". He discussed there two grammatical phenomena — adverb preposing and quantifier lowering. On the basis of his analysis he stated that rules relating logical froms to surface structures overlap with grammatical rules, because they generate grammatical sentences and "filter out the ungrammatical ones".

Note 21 contd

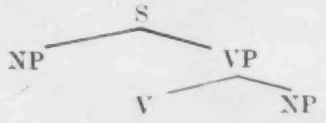


The second problem is discussed in some detail by Harman (1970) in the article "Deep structure as logical form". He presents arguments for preferring a deep structure of the form *a* (predicate followed by arguments) over a deep structure of the form *b* (subject phrase followed by predicate phrase).

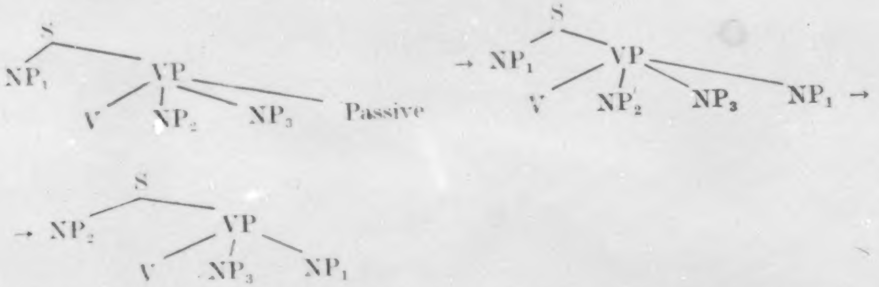
a.



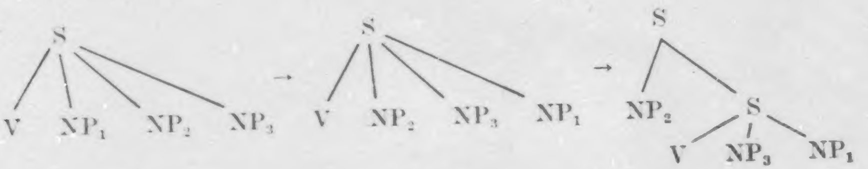
b.



For instance, the passive transformations is much simpler in the new analysis. According to the earlier version, the passive transformation moved the subject of the sentence to the end of the verb phrase and put the object where the subject used to be. Since it was not clear why the original subject should end up inside the VP, and not outside of it, attached directly to the S node, an ad hoc solution was devised. In the revised version it was assumed that the deep structure of passive sentences contained a constituent "passive". This constituent appeared within the Verb Phrase because it was supposed to be a form of Manner Adverbial. In this version, the transformation applied only to structures with the "passive" constituent and it moved the subject NP in the place of "passive" and the object to the place of subject:



In the new analysis the passive transformation represents only one operation — moving the first argument to the end of the clause. The second operation — moving the object — follows automatically as regular subject raising (under the convention that the left-most NP is always the candidate for surface subject):



The superiority of the new analysis over the old one concerns primarily the simplicity of the theory; the new approach is simpler in the whole system of the theory. Other examples discussed by Harman which prove the superiority of logical form over the standard NP — VP form involve pronominalization, extraposition, and quantifiers.

Generative semantics not only changed the model of language and the methods of linguistic analysis, but it also expanded the domain of linguistic theory[22]. In opposition to sentence atomism of early TG, recent linguistic studies concentrate on such topics as: focus, topic, presupposition, and felicity conditions of illocutionary acts. The domain of linguistic investigations in many cases overlaps with the domain of philosophy and psychology. Since a handling of certain linguistic phenomena requires an appeal to the cognitive and behavioral processes of speakers and listeners as well as to some situational aspects of the linguistic act, not only is the distinction between competence and performance violated, but also the distinction between what is linguistic in nature and what is cognitive. As Maclay (1971 : 179 f) states in his overview of linguistic science, pretty soon the boundaries of linguistics will have to be redefined with respect to neighbor disciplines such as psycholinguistics, cognitive psychology, human communication, philosophy of language, etc. Nevertheless, whatever the consequences for linguistics, it is a good feature of any science if it can make use of the results and methods of other disciplines and also contribute to them.

We will discuss here in some detail the notion of presupposition and its treatment in generative semantics. We will try to show by taking the examples from recent linguistic literature on this subject, how the introduction of this notion affected the theory of grammar, especially its explanatory power. Any discussion of presupposition makes it clear that the distinction between the linguistic knowledge and the speaker's knowledge of the world is extremely difficult to be drawn, expecially if we take presupposition in its broader sense — as the felicity conditions which involve non-linguistic situational elements.

The basic fact about language on which recent linguistic theory relies, and which tries to make explicit, is this one: there is more to sentences than merely conveying some piece of information in terms of "who did what to whom and when". The grammatical form of the sentence shows that the sentence not only asserts something, it also conveys additional information about the speaker and listener — their mutual relationship, their knowledge of the world and beliefs and information about the particular linguistic act.

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[22] This expansion is not the result of the acceptance of the generative semantics model; however, the main contributions to these new topics have been made by generative semanticians.

These additional aspects of sentences are discussed by linguists under the terms of topic, focus and presupposition.

As to the presupposition itself, the distinction between assertion and presupposition plays an important role in the grammatical discussion of questions and negation, and in fact it was the analysis of questions and negative sentences which first drew the linguists' attention to the phenomenon of presupposition. It was observed that is was the assertion part of the sentence which could be questioned and negated, not the presupposed part. In interrogative and negative statements the presupposition remains the same as in the corresponding declarative statements. For all three sentences: 49, 50, and 51 the same presupposition *Pedro is a Norwegian* holds.

49. *Pedro regretted being a Norwegian.*
50. *Pedro didn't regret being a Norwegian.*
51. *Did Pedro regret being a Norwegian?*

In fact, negation is the generally accepted test for presupposition, in accordance with Keenan's (1971 : 45) definition:

> S logically presupposes S′ if S logically implies S′ and if the negation of S. S, also logically implies S.

The term presupposition applies not only to sentences. We can also speak about the presupposition of individual words. For instance, the word *bachelor* presupposes that the person to whom it refers is male, adult, human, etc. It asserts that the person has not been married. It has been proved by Fillmore (1971) that certain classes of verbs can be very economically described if the proper distinction between the asserted and the presupposed meaning is made. He analyzed verbs of judging (*accuse, blame, criticize, praise, scold,* etc.) with the use of very few semantic primes such as JUDGE, DEFENDANT, SITUATION, ADRESSEE, etc., and polarized them with respect to the different presuppositions involved. For instance, accuse and praise turn out to be semantic reversals of each other only as far as their presuppositions are concerned. Thus 52 and 53 both assert that *Harry claims that I wrote a strong letter to the company*:

52. *Harry accused me of writing a strong letter to the company.*
53. *Harry praised me for writing a strong letter to the company.*

but 52 has the presupposition:

54. *Harry judges that writing a strong letter to the company is bad.*

whereas in 53 the presupposition is 55:

55. *Harry judges that writing a strong letter to the company is good.*

There are numerous grammatical phenomena which are best explained with reference to presupposition. One such case is the influence of the surface distribution of certain elements upon the meaning of the sentence. For instance, Chomsky (1972: 108) discusses the occurrence of the morpheme *even* in sentences like 56 and 57:

56. *John is tall even for a pygmy.*
57. *Even John is tall for a pygmy.*

The different position of *even* in these sentences changes their meaning. Actually, where *even* is to be inserted depends on the presupposition made by the speaker. If the presupposition is that pygmies are tall, sentence 56 will be used, if the presupposition is that pygmies are short, sentence 57 will be appropriate. Chomsky's point is that in order to account for the difference of meaning between 56 and 57, the theory of grammar must allow surface structure interpretation rules. The generative semantics point of view is that the total information about the meaning of the sentence, presuppositions included, must be present in the semantic representation, so that, depending on which presupposition is present in the deep structure, the rules of grammar will derive either 56 or 57. It is obvious now that any theory of grammar has to incorporate presuppositions; yet the way of dealing with them in the model with a separate interpretive semantic component is much more complex and less consistent than the generative semantics model[23].

A similar case of the influence of presupposition on the surface phenomena was observed by Kim Burt and discussed by Lakoff (1971 b). This example concerns the deletion of the future auxiliary *will*. In some sentences *will* can be deleted, whereas in others it cannot. The distinction is based on the presupposition: *will* can be deleted just in case it is presupposed that the speaker can be (relatively) sure of the event to occur (compare sentences 58 - 61):

58. I $\left\{\begin{matrix}\textit{will get}\\ \textit{get}\end{matrix}\right\}$ *my paycheck tomorrow.*

59. I $\left\{\begin{matrix}\textit{will get}\\ \textit{*get}\end{matrix}\right\}$ *a cold tomorrow.*

60. *The astronauts* $\left\{\begin{matrix}\textit{will return}\\ \textit{return}\end{matrix}\right\}$ *tomorrow.*

61. *The astronauts* $\left\{\begin{matrix}\textit{will return}\\ \textit{*return}\end{matrix}\right\}$ *safely tomorrow.*

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[23] As Morgan (1969 : 169) points out, in order to account for the ungrammaticality of sentences such as:

1.* *Since the sun is out right now, it would be time to get up.*
2.* *Since the sun were out right now, it's time to get up.*

grammar with interpretive semantic component has to either
a. specifiy the factivity of *since* and the possible surface complements of *since*, or
b. allow that 1 and 2 are grammatically well-formed and only semantically anomalous.

Lakoff (1971 b) has observed a very interesting phenomenon, namely, that the same string of words can be a grammatical sentence or an ungrammatical sentence, depending on the presupposition. In the case that he discusses, the term presupposition refers not only to the general knowledge of the world (possessed by the speaker or shared by both the speaker and the listener) but also to the common cultural background of the speaker and the listener. Thus 62, with contrastive stress as indicated:

62. *Jóhn called Máry a virgin and then shé insulted him.*

is grammatical
only relative to the presupposition: *to call someone a virgin is an insult*.

There are cases in grammar where the insertion of a given lexical item depends wholly on the presupposition and cannot be predicted from the representation of the basic proposition. For instance, *but* replaces *and* (or whatever the counterpart of *and* in the semantic representation is) in cases when the second conjunct expresses something which is contradictory to the speaker's or listener's expectations, based on his knowledge of the world and social conventions. Thus the sentence:

63. *It is June but it is snowing.*

asserts that: *It is June and it is snowing* and presupposes that *Snow in June is contrary to the speaker's expectations*. Under this presupposition *but* is inserted instead of *and* (Lakoff 1971 b).

Due to the incorporation of presupposition in grammar many observations about language came to be stated explicitly. It appears that numerous problems which in traditional grammar were dealt with by supplementing the basic rules with long descriptive statements about when to use a given construction, can be accounted for by representing presuppositions in the semantic structure of sentences. To such cases, among others, the always troublesome conditional sentences belong.

In spite of the fact that many linguists have recently been preoccupied with presupposition, the problem of the formal representation of presupposition has not been solved yet. Lakoff (1970 b : 209 ff) proposed that presupposition be represented as a separate proposition in the form of a tree diagram which would occur to the right of the main tree, following the sign of presuppositional relation "→". The question, however, can be asked whether the sentences forming presuppositions can be treated in exactly the same manner as the actual linguistic utterances or whether some additional notational conventions should not be devised for them. This problem is connected

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The first alternative is undesirable because the same fact is stated twice in the theory. The second possibility allows the grammar to derive 1 and 2 and leaves the rejection of these sentences to the intuitive judgements of the native speakers. In the generative semantics approach, the factivity of *since* will be specified at the deepest level as a semantic property. 1 and 2 will be rejected by grammar as involving contradictory presuppositions.

with the problem of whether presuppositions are linguistic or psychological in nature, as Osgood (1971) claims.

If we were to summarize briefly the state of current linguistic research, we would have to say that after working out the general theoretical framework within which the grammars of languages ought to be described, rather than concentrate on elaborating detailed derivation of at least the sentences belonging to the basic core of language, linguists are preocuppied with answering the question "What else will the grammar of language have to take into account?". Finding and expressing the new facts about the complexity of natural language is one of the main advantages of modern linguistics. But so far, the theory is still in the stage of vague proposals rather than actual solutions to the problems. The assumption implicit in this situation is that instead of writing specific rules for each sentence as soon as some phenomena about this sentence are discovered (as it was the practice in early TG, and then changing them when the new phenomena are discovered, it is better to wait until the whole complexity of what is to be described emerges from various preliminary investigations and only then elaborate the rules of grammar, because the probability of their being correct is much greater. As an example of the studies of the phenomena which might appear to be peripheral, but which reveal further complexity of language, we might quote Lakoff's (1970 b) observations about qualifying phrases and Sadock's (1970, 1971) discussion of '*whimperatives*' and '*queclaratives*'. By qualifying phrases Lakoff means phrases which cancel the presupposition of the sentence they qualify. For instance, in 64 the if-clause cancels the presupposition of the first part of the sentence which is *Sam was beating his wife*.

64. *Sam stopped beating his wife if he has ever beaten her at all.*

Sadock focused his attention on the divergence between the form and the expected function of certain constructions. Thus, sometimes sentences which are formally questions function as imperatives (as 65) and questions function as assertions (66)

65. *May I have a drink?*
(=Give me a drink)

66. *Who gives a damn about Turing Machines?*
(=Nobody gives a damn about Turing machines)

VII. IMPLICATIONS OF MODERN LINGUISTICS FOR CONTRASTIVE ANALYSIS

As we have pointed out in the first section of this article, what is compared in languages depends on how the investigator conceives of language. The general theory of language determines the methods, form, and goals of contrastive studies. With the changing theory CA ought to change, providing the new theory is of higher scientific value than the old one. It is our standpoint here that transformational theory represents a higher degree of understanding of the phenomenon of language than the structuralist theory. It is not the question of one being wrong and the other correct, or even not a question of the new theory being an improved formulation of old theory. Since structuralists dealt with describing the surface structures of language (according to their understanding of what language is), they developed their own discovery procedures and introduced scientific terms matching their aims. And as far as the description of surface structures is concerned, their methods and terms are still retained, and there is no need of replacing them as long as they work.

The superiority of transformational thinking over the structuralists' views consists in its approach to the relationship between language and other phenomena related to language. Structuralists analyzed language as a phenomenon per se and described its units and patterns without any reference to anything outside language. The units of the system were justified within the system itself. Transformational theory not only stresses the connection between language and thought, and the deterministic relationship between human cognition and human language, but also seeks as its goal to state this relationship explicitly. The assumption of TG is that basically the cognitive and perceptional processes of humans are the same, and they are reflected in a consistent and systematic way in all languages.

If this view on language is accepted, then the main implications for CA can be summarized briefly as:

1. CA cannot limit itself to the enumeration of the differences and similarities between the subsystems of languages (such as tense system, vowel system, modification structures, etc.). Nor can it be satisfied with contrasting equivalent sentences in two languages without using a theoretical apparatus allowing the proper formulation of differences and similarities in terms of general laws.

2. CA has to be meaning-based. What is to be compared are the ways of expressing the same meaning in different languages. The differences and similarities are to be found in derivational processes leading from common semantic structures to different surface structures. The differences and similarities are expressible in terms of types of rules required for the derivation of sentences and types of constraints on these rules.

3. CA has to take as its language model one which treats semantic component as generative, i.e., one in which the derivation of the sentence starts from its semantic structure, for at least three (connected with each other) reasons:

   a. the syntax-based model, such as that of *Aspects*, as it was proved and pointed out above, cannot cope with a number of grammatical phenomena,

b. syntactic deep structure is in fact a very shallow and specific language dependent level of analysis,

c. the common syntactic base (in the meaning of Chomsky 1965) is something which would still have to be proved and, thus, could not be used as a level of reference in the comparison of languages. On the other hand, the possibility of expressing the same meaning in different languages can be reasonably safely assumed[24].

So far there are two main proposals for a semantically based model of language. One approach is that of generative semantics. It has been discussed above. The other is Chafe's proposal presented in his book *Meaning and the structure of language* (1970). The basic difference between these two approaches lies in the fact that generative semantics is sentence oriented and Chafe's grammar is word oriented. In Chafe's model the derivation of a sentence begins from a predicate which according to its features, combines with noun phrases into various types of sentences. Unlike generative semanticist Chafe tries to give concrete rules for the derivation of the basic core of language. His proposal, however, concerning the generation of semantic structures is of little value for CA, because his semantic structures provide too little semantic information and because these structures are in fact based on the syntactic principles of combining words into sentences which are found in Indo-European languages. One of the reasons for which the generative semanticists refrain from proposing rules for forming semantic representations of sentences is the fact that these rules have to operate on universal semantic primes of which too little is known so far. It is one of the goals of CA, and one of its possible contributions to the general theory of language, to provide the answer to the question of which of the semantic features and semantic principles of their combinations into words and sentences are to be chosen as universal, i.e., as being useful in the most economical description of languages.

It seems that although the comparison of any two languages can lead to interesting results, the most systematic and economical way to establish the universal features of languages would be by way of a progressive comparison of languages according to their genetic relationship — starting from the comparison of a few closely related languages and ending with the comparison of the features of large families. This procedure would lead, by a process of elimination, from sub-universals (features common to a group of languages) to real universals (features common to all languages). The search for universals would then be viewed as a specific kind of reconstruction; but instead of proceeding back along the axis of time, the investigator would proceed higher on the axis of abstraction, from what is surface and variable to what is deep and constant. Although it is only a hypothesis that the deep similarity of languages is correlated with their genetic relationship, it is highly plausible and certainly worth investigating.

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[24] The cultural difference reflected in different concepts expressed by lexical items which do not have their counterparts in other languages are regarded here as marginal phenomena. It is not the language in such cases which does not allow the expression of a particular concept but the unawareness of the existence of some aspects of reality which does not allow the formation of a given concept. Once the people acquire the new concept, they find ways of expressing it in their language — either by borrowing, or by inventing a new word, or by using some descriptive means. As Chafe (1970) rightly pointed out, lexical differences reveal differences not so much between languages as between people.

No matter whether viewed as a "theoretical" task or for strictly pedagogical purposes, the main assumptions about CA remain the same. It is not true that CA done only for the sake of facilitating the teaching and learning of foreign languages is simpler. We claim that the opposite is true. Apart from establishing realization grammars for the two given languages and making the differences and similarities between them explicit, a pedagogically oriented CA has to devise additionally a transfer grammar whose task is to relate the realization processes of one language to the realization processes of the other language. It is necessary to emphasize that if the transfer grammar is to have any explanatory power and psychological relevance, it has to be based on realization grammars, i.e. on the systematic distinction between what is common and what is different and how it is different.

By *transfer grammar* we mean an approach to the comparison of two languages which results in the rules of the following form:

In conditions λ rule α of the realization grammar of the source language is replaced by rule β of the realization grammar of the target language, where λ refers to formal conditions represented by specific configurations of the trees.

Until recently transfer grammars were usually obtained by a mechanical procedure of contrasting the surface structures of two languages under the condition of meaning equivalence or sometimes only formal equivalence. This approach underlay the language textbooks for many years. Some of the contrastive works, even after the advent of TG have been written in this fashion. For instance, the contrastive parts of *The grammatical structures of English and Spanish* (Stockwell 1965) consist of statements of the following type:

a. Element A in English is element B in Spanish,
b. Element A in English is either B or C in Spanish,
c. Element A in English does not exist in Spanish,

where A and B mean surface elements. Such a grammar meets the requirements of observational adequacy only. In the discussion of learning problems which follows these statements the authors enumerate differing structures, regardless of whatever lexical items may occur in them. Their comparison of sentence patters, for instance, is based on the formal equivalence. It is a well known fact however, that often formal similarity disguises some relevant differences. If, for instance, English students of Polish know that the sentence pattern: *Subject — be — Adjective* is common to English and Polish, it does not mean that they know how to use this pattern correctly. Thus, although the translation equivalent of the English 67 is a congruent with 68 in Polish[25]:

67. *This flower is beautiful.*

68. *Ten kwiat jest piękny.*

yet for the English 69:

69. *I am comfortable here.*

(Subject — be Adjective — Locative)

there is no congruent structure like 70 in Polish:

70. **Jestem wygodny tutaj.*

The translation equivalent of 69 in Polish is 71, which follows a different sentence pattern:

71. *Jest mi tutaj wygodnie.*

(be — Indirect Object — Locative — Adverb)

Meaning and structure of language cannot be treated separately, and this claim is one of generative semantics; there is no natural boundary between syntax and semantics. Any such boundary is artificial. Such a statement does not mean that a linguist cannot devise such a boundary for his purposes. As in other sciences, so in linguistics, it is legitimate to disregard some aspects of the investigated phenomenon in order to analyze better some of its other aspects. The point is that the ideal conditions of scientific investigations must not be taken for true conditions of reality. In order that the model of a given part of reality fitted reality, it has to incorporate all relevant aspects observed in reality. The models that do not fit are useless. After all, the goal of any science is cognition understood in such a way that the knowledge gained in science can be used by people. The language model has to be devised in such way that it fits the mental reality and thus, explains the working of language, and further, the way the human mind operates.

Getting back to our distinction between the realization and transfer grammar, *a realization grammar* of any given language is understood as a set of rules necessary to derive all grammatical sentences of this language from their corresponding semantic representation. As has been mentioned above, for pedagogical purposes realization grammars will have to be supplemented with transfer grammars.

The difference between the old and the new approach to contrasting languages can be illustrated by the following diagrams:

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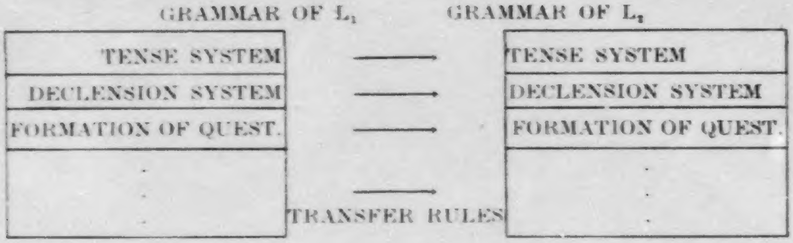
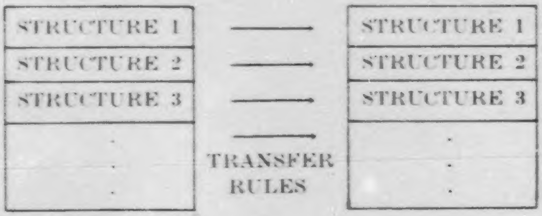
[25] The term "congruent" is used here in the sense of Krzeszowski (1971). Congruent constructions are mutually translatable constructions of two languages and they consist of the same number of items arranged in the same order.

OLD APPROACH

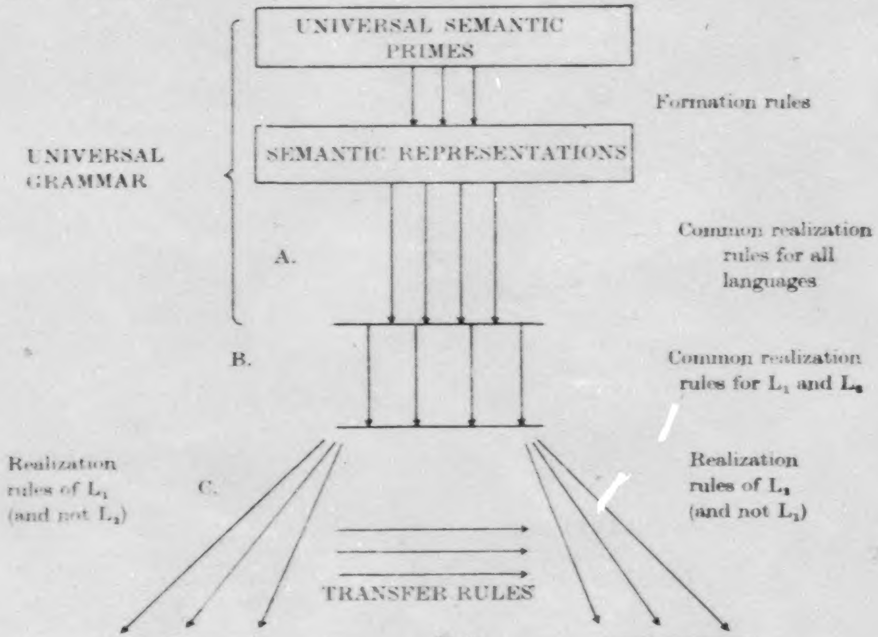
a.


GRAMMAR OF L_1
GRAMMAR OF L_2
TENSE SYSTEM
DECLENSION SYSTEM
FORMATION OF QUEST.
TENSE SYSTEM
DECLENSION SYSTEM
FORMATION OF QUEST.
TRANSFER RULES

or b.


STRUCTURE 1
STRUCTURE 2
STRUCTURE 3
STRUCTURE 1
STRUCTURE 2
STRUCTURE 3
TRANSFER RULES

NEW APPROACH


UNIVERSAL SEMANTIC PRIMES
Formation rules
UNIVERSAL GRAMMAR
SEMANTIC REPRESENTATIONS
A.
Common realization rules for all languages
B.
Common realization rules for L_1 and L_2
Realization rules of L_1 (and not L_2)
C.
Realization rules of L_2 (and not L_1)
TRANSFER RULES

These diagrams present the whole situtaion simplified and even incomplete. Diagram 3, with which we are now concerned, does not show how and where the Universal Phonetic Primes and the phonetic representations enter the picture. The output constraints which restrict the possible surface structures also ought to be included. Some of these constraints are universal and some are language specific. For instance, Ross's (1968) Frozen Structure constraint is valid for both English and Polish; hence, the ungrammaticality of 72 and 73, in spite of the grammaticality of 74 and 75:

72. **The coat which a girl came in who had worn was torn.*
73. **Ten plaszcz, który jakaś dziewczyna weszla miala na sobie byl podarty.*
74. *A girl came in who had worn this coat.*
75. *Jakaś dziewczyna weszla, która miala na sobie ten plaszcz.*

This constraint states that if a relative clause has been extraposed the elements of this clause cannot be moved out of this clause (for instance by relativization as in 72 and 73).

Another constraint which forbids any NP to be moved out of the environment [Preposition —] affects Polish, as the pair of sentences 76 and 77 indicates, but it generally does not affect English:

76. *Patrzylem na te obrazy.*
77. **Które obrazy patrzyleś na?*
78. *I looked at these pictures.*
79. *Which pictures did you look at?*

On the other hand the Left Branch Condition which affects English does not affect Polish. Thus in 80 *what* cannot be separated from *colour*, hence the ungrammaticality of 81, but in Polish both 82 and 83 are grammatical:

80. *What colour is this?*
81. **What is this colour?*
82. *Jaki kolor to jest?*
83. *Jaki to jest kolor?*

Language specific constraints have to be stated in the transfer grammar somehow too.

It is important to realize that diagram 3 is not a model of the derivation of a sentence but a model of a grammar, so that in section A, for instance rules can occur which are relatively late in the process of deriving sentences, and in section C, although it is less plausible, rules which are relatively early in the process of derivation. The rules in the diagram are ordered from top to bottom, not according to their successive application but according to the criterion of their universality. These two criteria may and do sometimes overlap.

Another fact which has to be stressed is that all realization rules are transformational rules, i.e., each such rule defines the difference between two trees representing the consecutive states in the derivation of sentences (to be precise one should say that these differences are not between trees, but between their branches or sub-branches because transformations are in fact *local* derivational constraints). It is thus difficult to say what form the transfer rules will have. Still too little is known about the universals and realization processes. Before we can attempt formulating transfer rules, CA has to limit itself to the task of discovering universals and sub-universals by comparing different languages.

The main problem which faces modern linguistics is that of semantic representation. Before the question of how the meanings of utterances are to be represented formally can be answered, the problem of which items these meanings consist has to be solved. The optimal choice of the universal set of semantic units with regard to the criterion of explanatory adequacy can only be obtained by means of a systematic comparison of many languages within the same theoretical framework. The so-called lexicalization processes are of primary importance here. These processes consist in the different ways primary predicates can combine into concrete lexical items in specific languages. Since, theoretically, given a set of primary predicates, these predicates can confluence in many different ways resulting in effect in lexical items which do not exist in any natural language, discovering the empirical restrictions on the possible lexical item of a human language is essentail. Solution of the problem of the possible lexical item may turn out very helpful in answering some of the questions about human perceptive abilities.

There is some evidence to support the hypothesis that lexiacl items of a given language are formed out of the primary predicates according to the syntactic rules operating in this language. For instance, McCawley (1970) claims that reflexivization is involved in the formation of *suicide* from *to kill oneself*, and Equi-NP-DEL operates in the derivation of *malinger* from the more basic *pretend to be sick*. According to McCawley (1970 : 243):

> ... language will only permit lexical items which correspond to syntactic constituents that would arise from well formed semantic representations through existing prelexical transformations.

Problems connected with lexicalization, even if one restricts oneself to one language, are numerous. Some of the questions which will have to be answered are the following ones:

1. How should lexical gaps (items that do not exist in a given language) be accounted for? We are interested here in those lexical items which are possible lexical items of a human language and which do not occur in a given language. A distinction has to be made between items such as, say, **to goand*, formed from the constituents *go* and *and*, which probably does not exist in any language, and items that occur in some languages and do not appear in others. For instance, a lexical item corresponding to *to drink from a bottle*

does not occur in English or Polish, but it exists in Dehu (*gahan*). The first type of lexical gap will be dealt with in universal grammar. The other type of lexical gap, which includes also phenomena such as the nonexistence of **passer* (*from to pass an exam*) as opposed to the existence of *inventor* (from *to invent something*) will have to be accounted for by particular grammars of different languages.

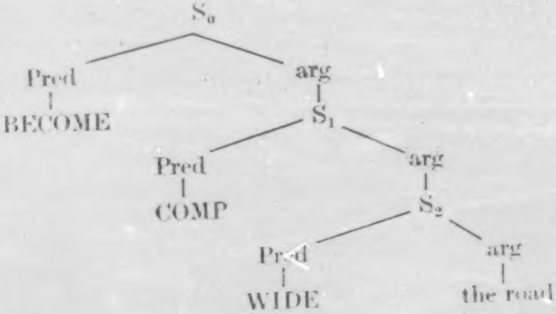
2. Until recently the hypothetical primary predicates were established on the basis of a simple paraphrase. Thus, for instance, *kill* was decomposed as *cause to become not alive* and *bachelor* as *a man who has never been married*. Logical equivalence of sentences in which these expressions could appear was regarded as the primary criterion of a paraphrase relation. It meant that two expressions had the same meaning, if one could replace the other in the same sentence without any change in the truth value of that sentence. Since, however, as was mentioned in section VI, logical equivalence turned out to be insufficient for the purposes of linguistic analysis, the semantic equivalence, in the sense of Shopen (1972), has to be established on the basis of the equivalence of two expressions in larger contexts. Let us exemplify the problems connected with establishing semantic representations with a brief discussion of inchoatives of the type:

83. *The road widened.*

The first paraphrase which comes to mind is 84:

84. *The road became wide.*

so that the first approximation to the semantic representation of 83 might be something like structure *a*:

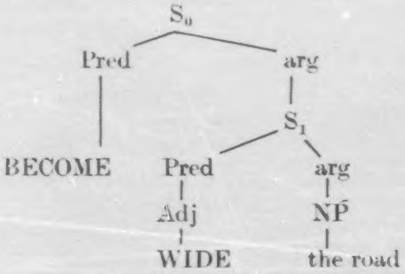


To derive sentence 83, apart from the transformation of predicate raising which puts WIDE and BECOME under the domination of the same S node (at this stage the derivation of 84 ends) and additional optional transformation is performed which merges the two predicates into one lexical item WIDEN.

This approach treats 83 and 84 as paraphrases, i.e. mutually interchangeable, but it is not correct because only in one of its meanings is 83 equivalent to 84. As Lakoff (1966) observed in the article "Some verbs of change and causation", it is necessary to distinguish between the absolute sense of WIDEN (in this sense 83 is synonymous to 84) and the comparative sense. In the comparative sense 83 is synonymous to 85:

85. *The road became wider.*

Incorporating this information into our theory, we might state that apart from the semantic representation *a*, sentence 84 may also be derived from semantic representation *b*:



What this amounts to is that in order to express the meaning represented as structure *a*, the speaker of English may say either 83 or 84; and in order to express the meaning represented by structure *b*, he may use either 83 or 85. The difference between meaning *a* and *b* is in fact the difference in presupposition. Thus, whereas 84 presupposes that the road was not wide before, 85 does not presuppose anything about the previous width of the road. The assertion of both sentences is the same, something like structure *a*. The COMP element (comparative) under this analysis belongs to the representation of presupposition. Any theory which claims to have explanatory value has to explain the mutual relation between these three sentences (83, 84 and 85). Even if we were to accept that the pairs 83, 84 and 85, 83 are stylistic variants, the conditions for the use of one rather than the other would have to be stated in terms of different styles.

A related problem is that of the relationship between *become, get, turn, grow,* and *come about,* used interchangeably in some periphrastic inchoative constructions. Are sentences 86, 87, and 88 synonymous?

86. *The sauce became thick.*

87. *The sauce came to be thick.*

88. *The sauce got thick.*

Can it be assumed that given one semantic representation for them, the choice between *become, come to,* and *get* is random? This does not seem to be the case; at least the difference between 86 and 88 looks like a difference of style. 86 is more formal and 88 more colloquial. Notice also that not each of the above enumerated 'inchoative auxiliaries' can co-occur with each adjective with an equal degree of acceptability:

89. ? *The sauce grew thick.*

90. ? *The sauce turned thick.*

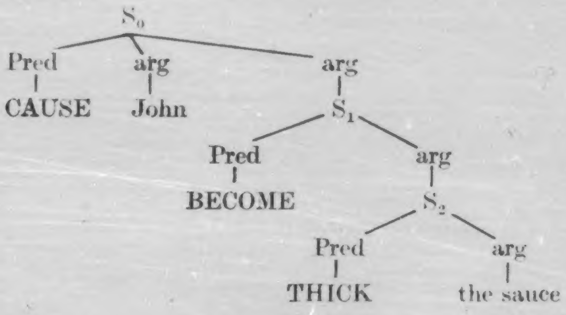
The grammar of a given language has to take these facts into account. Languages can thus also be compared as to how many lexical items (wholly synonymous or differing only according to style) can correspond to the same semantic representation of a sentence.

3. Lexical insertion has to be correlated with the order of other transformations occurring in the derivation of a given sentence. Thus, certain transformations may be blocked by the choice of some lexical items rather than other (synonymous to them). For instance, in spite of the synonymity of 91 and 92 (one meaning of 91 is synonymous to one meaning of 92):

91. *John thickened the sauce.*

92. *John caused the sauce to thicken.*

derivations of these sentences from the same semantic structure involve different transformations.



In order to derive 91, the predicate-raising applies twice, and the three predicates CAUSE, BECOME, and THICK, according to the rules of English, form one lexical item *thicken*. In the case of the derivation of 92 the lexical item *cause* is inserted first and replaces the predicate CAUSE. Predicate-raising can apply only once; BECOME and THICK conflate into *thicken*: the subject of S_2 (which is by now under the domination of S_1) is raised to S_0, and finally the appropriate complementizer — *to* — is inserted.

4. The fourth problem that we mention here is that of lexical items which are used in more than one meaning. Can these cases be explained in the theory, i.e., can the conflation of two different combinations of predicates into one surface form be viewed as resulting from some rule of grammar, or should it be viewed as accidental and, hence, unpredictable by rules of grammar? Robin Lakoff (1970 b) proposed that a single lexical item may represent

two concepts only if those concepts are in the same semantic class. Two concepts are said to be in the same "natural semantic class" if parts of their meanings are common. As a formal criterion Lakoff suggests the same form of meaning postulates and truth conditions for any two candidates for the membership of the same semantic class (1970 b: 224 - 32). According to Lakoff, the concepts POSSIBLE and PERMIT meet these requirements and it explains why their meanings can be expressed by the same lexical item *may* as in 94 and 96.

93. *It is possible that Sam will leave.*
94. *Sam may leave.*
95. *It is permitted for Sam to leave.*
96. *Sam may leave.*

Lakoff (1970b : 232) comments on this observation:

> Moreover, one might add, the more of such classes two concepts are in, the more natural it is for the same lexical item to represent those concepts. Note that this makes a rather interesting claim. Namely, that there will be no natural language in which the same lexical item will represent the two concepts of permission and certainty, or the two concepts of requirement and possibility.

It seems that in the same direction one might look for the explanation of cases when two different lexical items of one language have one translation equivalent in the second language. For instance, Polish *wiedzieć* and *znać* have one English counterpart: *to know*.

97. *Ja znam Annę = I know Ann.*
98. *Ja wiem wszystko o tobie. = I know everything about you.*

It is worth investigating whether the condition of belonging to the same semantic class explains this type of lexical correspondences between languages.

5. Another problem connected with lexicalization which will be signalled here concerns the necessity of realizing the distinction between what we shall call "lexicalization proper" and what was known in traditional grammar as morphological derivational processes. We shall speak about lexicalization proper in a case like 99:

99. CAUSE BECOME NOT ALIVE = kill
CAUSE BELIEVE = convince

and about a morphological process in case like 100:

	Basic predicate	Inchoative	Causative
English:	WIDE	widen	widen
	STRAIGHT	straighten	straighten
Polish:	SZEROKI	poszerzyć się	poszerzyć
	PROSTY	prostować się	prostować

The difference between lexicalization exemplified in 100 and the one exemplified in 99 consists in the fact that in the first case the surface form of the resulting lexical item can be predicted and in the other it can not be predicted by the general rules of grammar. The morphological process is still productive, whereas the lexicalization proper is not. In order to agree with the linguistic intuitions of native speakers, the grammar of a language has to account for this distinction.

Language differ in this respect too — what is in one language an unanalyzable morpheme, can in the other language be formed by means of morphological derivation. Compare for instance the following pairs of verbs in English and Sonrai[26].

"Basic predicate"		Causative	
English	Sonrai	English	Sonrai
learn	cow	teach	cowndi
understand	faham	explain	fahamndi
know	bay	inform	bayndi
get lost	derey	loose	dereyndi

6. Finally, we shall point to the phenomenon of a different distribution of meaning between words in corresponding sentences of two languages. Let us consider the way Polish and English differ in expressing existence and location. In English these two meanings are systematically expressed by the "there is" construction. The Polish translation equivalents relatively rarely contain the verb *to be* (*być*). Instead other verbs are used. Which verb is used depends on the semantic features of the noun about the referent of which the existence or location is predicated. The interesting fact is that, in spite of their different surface form, these verbs all convey the same meaning (of existence or location); often in the context NP—LOC they do not have any meaning of their own. Compare the following English sentences with their Polish counterparts:

101. *There was a swing band on the radio.*
W radio grała orkiestra taneczna.
102. *There was a long silence.*
Zapadła długa cisza.
103. *There was the smell of smoke and supper.*
Pachniało dymem i kolacją.
104. *There was a stream along the road.*
Wzdłuż drogi płynął strumień.

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[26] The examples are taken from Shopen and Konare (1970).

105. *There were patches on the slope.*
Widać było plamy na skarpie.
106. *There was a wedding this week.*
W tym tygodniu odbyło się wesele.
107. *There was a shot.*
Padł strzał.
108. *There was a passage here.*
Znajdował się tu pasaż.
109. *There was grass on the plain.*
110. *Równinę porastała trawa.*
110. *All over the place there were bits of paper.*
Wszędzie leżały kawałki papieru.

The Polish counterparts of the English *there is* with *być*, although in most cases acceptable, are much less natural than with the other verbs. The above examples are taken from Hemingway's *For whom the bell tolls* and Steinbeck's *Canary row* and their Polish translations.

The transfer grammar of two languages will have to account for cases like this too,-although they are, as it seems, on the borderline between linguistics proper and stylistics.

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CONTRASTIVE ANALYSIS – THE OUTLOOK FROM MODERN GRAMMAR

DENNIS R. PRESTON

Adam Mickiewicz University, Poznań

and

State University of New York, College at Fredonia

The role of contrastive analysis within the framework of modern transformational studies is not particulary clear. The press towards universals in linguistics would appear to leave very little behind for meaningful contrastive study.

Although modern grammar may provide useful tools for gaining insights into language structure, it is argued here that an eclectic approach to transformational—taxonomic—revisionist—case—traditional grammars be taken by the linguist interested in contrastive analysis and that his choice be guided by the nature of the data and by certain considerations of the stage of language acquisition to which the data apply.

It has become increasingly clear that contrastive analysis is no longer such an easily justified or executed proposition as it was during the predominance of taxonomic models of language analysis[1] In fact, even those not primarily concerned with theoretical models of linguistics, that is, language teachers, some psycholinguists, data collectors, and others, no longer emphasize the necessity of a contrastive statement between native and target languages.

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[1] The fact that a large number of contrastive projects are now in progress does not, I suggest, constitute proof to the contrary. In fact, it merely suggests that, as usual, funding agencies are a good twenty years behind in assesing the mood of academic and pedagogical communities. For lists and résumés of such large-scale projects see Selinker (1971).

This latter position is perhaps easily explained by the tendency for modern language teachers to turn away from explicit linguistic formulations, relying instead on such recent reinterpretations of the art as Wilga Rivers (1968), for example, and basing much of their new planning and development on the notions of "facilitation of communicative skills" and "cognitive development." Linguists, of course, note the irony of this, for it was a theoretician, Noam Chomsky, who gave sophisticated legitimacy to the doubts of the worth of linguistic analysis in foreign language teaching.

On the other hand, it is more difficult to explain the departure from the field of contrastive studies by those specifically interested in theoretical developments. I suggest that the main cause for the deterioration of interest in contrastive studies lies in such statements as the following, all taken from Chomsky's *Aspects of the theory of syntax* (1965)

1) The grammar of a particular language, then, is to be supplemented by a universal grammar that accommodates the creative aspect of language use and expresses the deep-seated regularities which, being universal, are omitted from the grammar itself. Therefore it is quite proper for a grammar to discuss only exceptions and irregularities in any detail (6).
2) Real progress in linguistics consists in the discovery that certain features given languages can be reduced to universal properties of language, and explained in terms of these deeper aspects of linguistic form. Thus the major endeavor of the linguist must be to enrich the theory of linguistic form by formulating more specific constraints and conditions on the notion "generative grammar." Where this can be done, particular grammars can be simplified by eliminating from them descriptive statements that are attributable to the general theory of grammar... (35).
3) In short, the structure of particular languages may very well be largely determined by factors over which the individual has no conscious control and concerning which society may have little choice or freedom (58).

I characterize these three passages as distinct contributions to the current unenergetic state of contrastive analysis within the framework of modern theoretical linguistics. Passage one I shall call the "grammatical irrelevance" criterion; passage two the "theoretical irrelevance" criterion; and passage three the "personal irrelevance" criterion. All three germs are at work in the decline of contrastive studies, and I should like to evaluate each one independently.

First, "grammatical irrelevance." Chomsky notes, and, in fact brings forth supporting quotes from numerous rationalist philosophers, that grammars of particular languages are no more than collections of idiosyncratic odds and ends. Thus, we may imagine that various suppletive forms (unless we discover to our horror that suppletion obeys some universal rule), pronominal irregularities, morphological curiosities, and specific selection features are the only items of interest in the grammar of a particular language. Such a list is an exaggeration, of course, as any competent speaker of even two related languages well knows, but the force of this comment, as in the following two, comes not so much from Chomsky's specification of any particular details about a given language as it does from the attractiveness of its appeal to a state of mind which would like to assume that the human condition is rather more like the rationalist's account than the empirico-behaviorist's. But enough of philosophy and on to the results of this statement in contrastive analysis. Easily enough, in this first case, we may see that the theoretical limitations on any set of contrastive statements would be very strong indeed. In fact, it would reduce contrastive analysis to its contrastive function and excise from it any comparative remarks. This would result in a futile operation, for even a cursory glance at any set of contrastive details would convince most readers that the worthwhile statements are those which draw heavily on the essential similarities of structures between languages. Sets of truly contrastive detail, too, are worthwhile only when they bring into explanatory contrast essentially comparable pieces of data. Purely idiosyncratic features of any two given languages are probably best covered in mutually exclusive lists which, if any comparative or contrastive statement is necessary, are best discussed in terms of semantic and or referential overlap. Following the "grammatical irrelevance" criterion, however, would lead to exclusion of all comparable pieces of structure, since, doubtless, they will be found to exist at the level of universal rather than particular grammar. Left for analysis, then, would be essentially non-comparable bits of peculiar and idiosyncratic information generally ignored in contrastive studies.

The criterion of "theoretical irrelevance" is, of course, closely related to the preceding one. But its direction is slightly different. It is not so much a prediction of what future particular grammars will look like as it is an exhortation to linguists, a specification of the area of most likely productivity. Chomsky clearly suggests that the notion of explanatory adequacy may be more quickly reached and more easily evaluated if we turn our attention almost exclusively to the problem of developing universal constraints on human language possibilities. While the criterion of "grammatical irrelevance" leaves the contrastive linguist only bits and pieces of language to toy with, the criterion of "theoretical irrelevance" assures him that, if he does trouble himself with such details, he will make no real contribution to linguistics. What a dilemma for the poor non-Boolean! It is rather like the child who first has all his favorite toys taken away from him and is then told that, if he plays with the ones which are left, it will be bad for him[2].

That should be quite enough to send all persons engaged in contrastive analysis out looking for a new, worthwhile project, but some of us persist in the notion that contrastive statements are essentially worthwhile in non-theoretical areas of language. Unfortunately, the criterion of "personal irrelevance" waits for us there, and I shall add a few more quotes here to make that position clearer:

> ... creative aspect of language use... (Chomsky 1965 : 6)
> ... stimulus-free and innovative... (Chomsky 1966 : 46)
> ... it seems to me impossible to accept the view that linguistic behavior is a matter of habit, that it is slowly acquired by reinforcement, association, and generalization... (Chomsky 1966 : 44).

As happy as we may be with the psychological assumptions which form the basis of this undoubtedly correct position concerning certain aspects of human language, the unwary reader may conclude that the most productive area of language rests firmly in those universal principles which have been excluded from contrastive analysis by virtue of the "grammatical irrelevance" criterion. In short, both the tiny parts of language left available to the analyst and the broad structural comparisons taken away from him are of little use to the individual language learner, for they do nothing to foster in him the "creative aspect of language use."

I shall do nothing here with the numerous criticisms of these Chomskean positions, particularly those which call attention to the obvious fact that the "personal irrelevance" criterion applies perhaps exclusively to the native language learner, for those arguments, doubtless important to foreign-language teaching strategies, do not touch on the shape of post-*Aspects* contrastive statements.

There are very few of us now who are not convinced of the essential "correctness" of a genrative model, though case grammar enthusiasts, lexicalists, and neo-revisionists argue about the various strategies for the realization of such a grammar. The problem presented to contrastive linguistics by the unanimity of grammatical opinion is, quite simply, whether or not contrastive analysis is such an endeavor which may fit comfortably within the framework of this new and obviously productive theory of language. Such linguists as DiPietro (1972) feel no uncomfortable impingement from transformational studies on contrastive analysis, for he urges, for example, that increased intensity of contrastive research may bring us closer to the realization of such universal constructs as Chomsky seeks. This seems clearly counter, however, to Chomsky's notion of how such universals are found, for he says that the

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[2] In fact, this is probably the kind of statement which has made those previously interested in contrastive analysis for its own sake try to justify it in terms of its possible contribution to universals in linguistics (cf Nickel 1971 a . 16).

> ... existence of deep-seated formal universals... implies that all languages are cut to the same pattern, but does not imply that there is any point by point correspondence between particular languages (Chomsky 1965 : 30).

Furthermore,

> It is not necessary to achieve descriptive adequacy before raising questions of explanatory adequacy. On the contrary, the crucial questions, the questions that have the greatest bearing on our concept of language and on descriptive practice as well, are almost always those involving explanatory adequacy with respect to particular aspects of language structure (Chomsky 1965 : 36).

While the first quote makes it clear that the achievement of linguistic universals will not serve contrastive analysis, at least as it has been traditionally understood, for such universals will not provide a "point by point correspondence between languages," the second quote is even more disastrous. I take it to mean that a thorough investigation of large number of languages is really unnecessary, for, Chomsky maintains, the universal features necessary to explanatory adequacy are natural by-products of close, descriptively adequate work on the structure of a particular language. DiPietro, then, is taking heart where there is none if he believes that transformationalists are gathered in dark, smoke-filled rooms developing universals in linguistics from a carefully prepared set of contrastive data drawn from the world's languages. In fact, linguists have examined very few languages in their attempt to contribute to the growing set of universal assumptions, and it is very likely that such a procedure is essentially correct[3].

Contrastive linguistics is not, then, a handmaiden to theoretical grammar, providing insights into universal characteristics of human language. If this is the case, is there any reason to assume that contrastive statements framed in transformational terms are more valuable than any others? The temptation to make this assertion is very strong, for one would assume that the best way to carry out a project deeply concerned with language would be to utilize the most elegant grammatical device available. I believe, however, that the very nature of the use to which contrastive statements are put makes this the wrong decision. Since we have seen that contrastive statements contribute only indirectly to theoretical statements concerning explanatory adequacy, we may assume, rather safely, that their prime utility lies in the area of foreign language teaching, though their exact relation to classroom procedures, techniques, methods, materials preparation, teacher training, and evaluation is not touched on in this paper. Suffice it to say here that such information as is provided in a contrastive statement is important to persons engaged in the areas listed above[4].

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[3] It is not at all clear to me that any of the insights into covert categories have automatically come from contrastive studies. I regard such discoveries more the result of "fiddling around" with language (or Language). I have in mind, of course, such suggestions as James' concerning a deep "article" in the Slavic languages. Cf. James (1969).

Given the importance of such information, a practical rather than theoretical assumption, let us try to develop quasi-theoretical or, at least, consistent procedures for the portrayal of contrastive information. Let us accept, too, for the moment, a position I believe to be untenable — that is, that such contrastive details are best displayed by the best available grammar i.e., a generative grammar. Marton (1968) has developed strategies for identifying similarity and congruence of structures within a transformational framework, and I believe his conclusions are essentially correct. The difficulty arises not in such sets of contrastive information as he provides in "English and Polish nominal compounds: a transformational contrastive study" (Marton 1970), but in the further pursuit of using the best grammar available, i.e., not just a generative grammar, but, according to Chomsky's evaluation procedures, the best generative grammar. Let us submit a relatively simple set of contrastive data to one post-*Aspects* model. Suppose we are set the task of contrasting the pronouns of Polish and English in simple strings. Granted, within the framework of a pre-*Aspects* model or even a taxonomic model, certain difficulties arise, but they strike me as being the productive element of such a comparison — the limited case marking in English as opposed to the more extensive case system of Polish; the lack of a formal-informal split in the second person in English and the subsequent agreement adjustment in Polish; Polish gender marking in the third person plural which is, of course, absent in English; deletability in Polish; and a host of other comparative and contrastive details, including citations of forms. Such a presentation seems reasonable and seems to consist of essential information in teaching either language to the opposite group. Notice, too, that in pre-*Aspects* models of generative grammar such information could be derived from congruent, or, perhaps in a few cases, similar strings, using Marton's definitions of such relationships. Unfortunately, Paul Postal (1966) has told us, and rather convincingly, that English pronouns are much better derived from the node marked Article. Adopting this device for the comparison of Polish and English pronouns is, of course, contrastive suicide. The result will be that we may identify congruent derived P-markers for which we can find neither congruent basic strings nor similar transformations. Unless Postal would derive Polish pronouns from some deep definitivizer or quantifier, usually realized on the surface as $\emptyset^5$, we have no hope for even marginally associating the obviously similar pronoun systems of the two languages

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[4] I am more than aware that such utility is controversial. However, I am a strong believer in the explanatory value of such description. I regard predictive powers of contrastive analyses as marginally useful. See, for a further discussion of such issues, James (1971).

Unfortunately, this example is not just by chance, for, as modern grammar pushes back towards universal underlying structures, particularly so long as theoretical grammarians are convinced that these structures are best developed in terms of ever-improving grammars of descriptive adequacy, there is less and less hope that conditions for congruence or even similarity may be met between the details of any two languages. That the drive for universality should deny comparative detail between even related languages should seem paradoxical is understandable at a superficial level, but if we recall Chomsky's assertion that universal grammar will eventually leave only idiosyncratic odds and ends and irregularity behind in particular grammars, the conclusion that better grammars, in the generative sense, provide less and less detail for contrastive analysis is self-evident.

The answer to this theoretical maze is, I think, quite clear, though the details for articulating the suggestion given here could not possibly be included in such a brief presentation as this. Quite simply, contrastive analysis does not constitute a part of theoretical linguistics, and, although knowledge of advances in theoretical grammar may aid the analyst in selecting appropriate strategies to display his findings, the shape of grammars for perhaps some time to come will not automatically provide the optimum model for contrastive studies.

Let us return to the ultimate users of contrastive information for a final turn at practical justification. First, it is a relatively safe assumption that most users of such studies are not well-schooled in the most recent advances in linguistics; some, unfortunately, are not schooled in linguistics at all. Even though hold quite strongly to the view that linguistic information is especially relevant to the foreign-language classroom, I would admit a measure of practicality to many contrastive studies which simply reflects the linguistic sophistication of a large number of persons engaged in foreign-language work. Second, contrastive studies which rely on ever-decreasing details simply do not provide the information required by the foreign language teacher, particularly in those cases involving non-native speakers as teachers of the target language. Finally, a fully-developed transformational comparison commits one of the transformational sins—over specification. In numerous cases the machinery necessary to even a partial transformational account of two strings is so formidable that the points of contrast are quite buried.

It seems to be the case, unfortunately, that recent developments in gram-

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[5] This is, of course, precisely what James does in James (1971).

mar will not supply us with a theory of contrastive analysis, any more than they have provided yet a theory of translation. Of course, such advances in linguistics must not be under-rated; we have come to an understanding of similarities which were quite unknown before, ones which lie so close to the surface that they may be called into play in the second language learner's cognitive development of a new tongue. Perhaps you are disappointed to have read so far and found only another plea for eclecticism, but this seems to be the essentially correct path for contrastive studies. Some data present themselves quite naturally and clearly in a transformational framework; others seem to cry out for a taxonomic presentation; still others seem better described on the basis of the newer case studies[6]. There may be some reason, too, to assume that contrastive studies may be best presented with some developmental background of the learner in mind. That is, certain gross semantic similarities, perhaps borrowed from a simplified case grammar, and certain gross syntactic arrangement patterns, borrowed from pre-*Aspects* transformational studies or even taxonomic models, are best shown in the forms suggested at beginning stages of language learning, and certain complex transformational processes and idiosyncratic events are better displayed through more elaborate generative devices or even traditional statements at a later stage in second language acquisition.

Clearly, such a suggestion as this would demand more thorough analyses along broader lines rather than complete analyses within a category, touching on as many constructions as possible for the category under investigation. That is, rather than developing a full set of contrastive details concerning, let us say, the adjective, or even a sub-category, a contrastive analysis of the sort I am suggesting here would spend as much time developing items of agreement and disagreement between full strings of minimal complexity before moving on to more complex strings, even though similar categories might play similar roles in the simple and complex strings. Even so, some of the comparisons offered at one level might demand different strategies of presentation, using at one moment an essentially structural (taxonomic) description and at another some variety of a generative model. Hopefully, however, in every case the essential details of the contrast and some indication of the developmental stage of the learner approaching the contrast would provide the primary motivation for the grammatical selection. We might note, too, at least in passing, that contrasts developed between different languages might demand the use of different grammars at precisely the same points. For example, a significantly different work order might make useful an early introduction of rather complex case notions, while languages with basic similarities in word order probably require no more than phrase structure compartments, at least in the beginning stages of instruction.

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[6] I am aware that such a suggestion goes against one of the few generally-agreed on principles of contrastive analysis. Cf., for example, Nickel (1971 : 4 - 5) for remarks on the uniformity of models in contrastive studies.

Excluded from this discussion is the possible relevance of advances in phonology and semantics. Distinctive feature phonology, combining as it does articulatory and acoustic statements, may be well-suited for determining developmental strategies but seems, at least for the moment, not particularly relevant to certain articulatory contrasts which are essential to contrastive phonology. Doubtless, however, the application of distinctive feature considerations to intelligibility studies will allow us to make sounder statements regarding non-ideal foreign language learning situations (i.e. those with limited objectives) than were possible within the framework of phonemic analysis. Semantics is, of course, not completely ignored here, for semantics and sytnax have become so much a part of one another that much of what was said earlier about syntax may be taken to apply to semantics as well. The problem here, however, is an obvious one. If we rely on older, taxonomic models or even on pre-*Aspects* generative models, we lose the semantic input common to most post-*Aspects* statements. That which is purely lexical is naturally idiosyncratic, but semantic projection rules (if they exist) and the specification of general selection and subcategorizational rules seem relevant. It is reasonable to assume, however, that much of the semantic detail which was found relevant to selectional and subcategorizational restriction is available for comment in grammars of another shape. In fact, its compatability is rather striking when compared to essentially irreducible complex transformational elements, particularly cyclic ones, or similar rules of the phonological component.

Finally I should like to suggest that much sociolinguistic information belongs to contrastive study and that it belongs "in place," not in a special language and cultural appendix. By sociolinguistic detail I mean situational restrictions on constructions, regional and class variants where relevant, and occupational and interest group language habits when they may be shown to be important to a group of learners (e.g. in "Special English").

In conclusion, no matter what the decision of the investigator of contrastive data as regards his selection of grammatical devices, it is fairly certain that he will be better guided by notions of utility than by considerations of theoretical adequacy.

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DEEPER AND DEEPER CONTRASTIVE ANALYSIS

Dennis R. Preston

Adam Mickiewicz University, Poznań
and
State University of New York, College at Fredonia

There is now no doubt that the major trend of post-*Aspects* syntactic investigation is an ever-deepening search for a semantic base for grammars (or Grammar). Although this search has done some damage to the notion of paraphrase as most linguists have generally understood that concept (e.g. recently, Chafe 1970 : 87; Polański 1972 : 4), it has, on the other hand, provided a more realizable basis for universal considerations. That is, it is more reasonable to assume that a large number of languages (perhaps all) might share rules such as

+——[O (I) (A)]

Figure 1

in which abstract semantic units (here NP's) are represented non-linearly, than to suggest that individual realizations of such rules as those represented by the following diagram have any universal applicability:

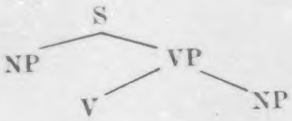

Figure 2

Although I have chosen here to pair Fillmore (1968) and Chomsky, (1965) a rather large number of post-*Aspects* models of syntax might have been chosen to represent the turn towards semantic considerations, e.g. Gruber (1967), McCawley, (1968, 1970), Langendoen, (1969, 1970), Chafe (1970), Lakoff, (1970), and Ross (1970). Although semantic-based grammars are by no means uniform, all suggest that deeper (and therefore closer to universal) categories of syntactic "classification" may be uncovered by considering primarily semantic notions. Thus, for example, Fillmore asks us to disregard domination (in the classical *Aspects* or standard transformational theory sense) in determining the function of various NP elements in a string. He notes the lack of functional similarity among the following so-called subjects:

1) *John* broke the window (with a hammer).
2) *The hammer* broke the window.
3) *The window* broke.

Why, Fillmore asks, should we call these three NP's similar, except in the most superficial (positional) sense? Of course, the standard theory would not have overburdened the analysis with extra notation indicating the surface and deep subject status of the items under discussion, but it would have us understand that an NP immediately dominated by an S in deep structure automatically acquires the identification "subject of".

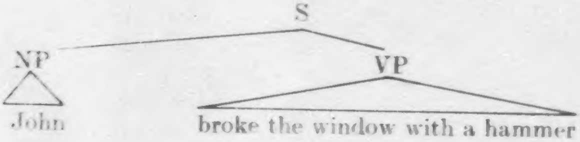

Figure 3

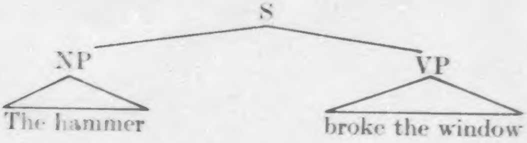

Figure 4

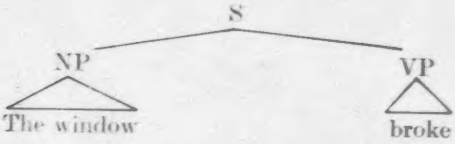

Figure 5

Although Chomsky does not thoroughly develop these functional assignment notions in *Aspects*, it is obvious that he would regard *John*, *the hammer*, and *the window*, respectively, as "subjects of" the above strings. His contention concerning the semantic surroundings of the verb (in this case, *break*) would be that strict subcategorizational and selectional rules would, eventually, provide the same information (along with lexical readings) as, for example, Fillmore's "case frames." Here, for example, Chomsky would note that *break* may take either + or − animate subjects but that it requires a +concrete object. In addition, the subcategorization rules would reveal that it is an object-deleting verb, allowing sentence 3 above.

Syntacticians who rely more on semantic considerations do not question the correctness of Chomsky's observations about the behavior of such an item as *break*; however, they suggest that concern for semantic roles will lead more directly (and explicitly) to the same results, do away with the necessity for a separate, interpretive semantic component, and, most importantly, yield universally valid generalizations.

Doubtless I have overgeneralized in this hasty characterization of *Aspects* and post-*Aspects* grammars. Certainly I have done an injustice to the distinction one might draw between the case (or "role") systems of Fillmore and Langendoen and the neo-transformational, formal logic systems of Ross, Lakoff and McCawley. In addition, I have excluded specific discussion of Chafe's suggestion that verbs, not nouns, bear the selectional load in sentences and of Gruber's notions concerning lexical transformations. I have not done so to mislead anyone about the differences which do exist among these several proposals, but to emphasize the essentially similar *semantic* properties at the bottom of most post-*Aspects* syntactic research and speculation.

In an earlier paper I have suggested that contrastive analysis is primarily a practical tool, one which feeds students, teachers, authors, and curriculum planners with explanatory detail (Preston 1972). Though I am as yet unshaken in that belief, I am concerned now with the selection of models for contrastive analysis in the semantic area. In the above-mentioned paper I suggest that an eclectic approach which considers the linguistic sophistication of the teacher, the level of proficiency of the learner, and the nature of the data to be presented is the best solution for contrastive statements concerning morpho-syntactic data (and, probably, phonological, though I have not treated that question). Such eclecticism, however, leaves open for selection models which bring with them little or no semantic sophistication. In particular, any choice of taxonomic models, often powerful pedagogical devices (cf. Cygan 1967), suggests that semantic material must be derived from some other source.

In the short time that has elapsed between that paper on the choice of linguistic models for contrastive analysis and now, I have grown to suspect that a transformational model (simplified) is a very powerful contrastive device (for Polish-English) for relative clauses and VP expansion; that a structural (taxonomic) presentation is probably most suitable for negation, interrogation, and pre-nominal modification; that traditional statements still serve best for larger verb and sentence modification structures (i.e. complex adverbial elements); and that case frames provide excellent, early specifications of basic string configurations and their constituents and meanings, though such a need for Polish-English is not at all clear. The difficulty with this hodge-podge of syntactic specifications is, of course, that accompanying semantic statements are not available with every grammatical choice. Even where they are, there is no assurance that they are suitable vehicles for contrastive semantic statements. Certainly we would not select a Katz-Postal interpretive semantic representation, with its inherent complexity, to accompany a simplified transformational comparison of relative clause embedding in Polish and English, though the choice of that particular syntactic device seems best.

To answer this question (or, at least, to approach it), I should like to leave formal linguistic considerations behind for the moment and concentrate on the foreign language learner as a meaning-perceiving organism. In short, what I want to consider is the semantic need of the learner, rather than the number of possible semantic systems which might be chosen for contrastive semantic analysis. (In fact, I would like to believe that this is essentially what I have proposed earlier for morpho-syntax, though I must admit that that earlier paper seems more concerned with models than with pedagogy) (Preston 1972).

What is the semantic information a learner seeks as he approaches a new language? My guess is that it is peculiarly nonlinguistic, for, regardless of linguistic theory, semantics always reflects that process which somehow hinges on the interpretation of linguistic forms and their relations, and there is no reason to challenge the productivity of such approaches, whether formidably theoretical (e.g. Gruber's lexical transformations) or patently simple (e.g. the traditional lexicographer's numbered entries of the senses of words). Nevertheless, the learner doubtless grasps the forms and relations of words in a new language as reality vehicles rather than as multiply ambiguous linguistic units whose ambiguities and collocational properties must be sorted out by some appropriate linguistic process. By "reality vehicle" I refer to the straightforward relationship the learner seeks between a phenomenological entity of the real world and a linguistic form. At one level such relationships are deceptively clear—they constitute the simple "point-and-say" method of on-the-street noun instruction. (In fact, I should like to suggest here a study of lexical facility of "immersed" versus "classroom" learners. My feeling is that immersed learners achieve a disproportionate proficiency in nouns just as a result of this "point-and-say" learning. From English to Polish, where the complex verbal system is perhaps the biggest hurdle, the results are far from optimal). Beyond "point-and-say", linguistic forms and phenomenological entities do not correspond so nicely, of course, though I still believe that it is primarily the relationship the learner seeks. (I exclude, of course, the perverse situation of the linguist as language learner; there, naturally, concern for distributions and formal relationships might be excessive).

At this point, excluding further mention of the linguist or others who might approach the foreign language learning task with peculiar sets, we may put forth the following hypothesis regarding semantic expectations in foreign language learning: the learner seeks to discover how reality is segmented, parcelled out, in the new language; he is not primarily concerned with the internal distribution of linguistic forms in the new language. For example, whether coming to English or Polish, the learner is more concerned with such sets as *widzieć, patrzeć, see, look* (verbs of vision) and *rozumieć, widzieć, see, understand* (verbs of understanding) than with the fact that *widzieć* and *see* may be doubly classified as both verbs of vision and verbs of understanding. Of course, I am aware that this level of seeking for reality in the new language often finds expression in the old language in such phrases as "How do you say X or Y in such-and-such a language?" However, I do not suspect that such questions ask for one-to-one correspondence responses to the lexical items of the native language as much as they simply use the native language as the only available vehicle for adjusting the structure of reality to the new language.

Such reality arrangements, rather than semantic distributions, seem, essentially, what Sharwood Smith attempts in his pedagogical grammar of future reference in English (Sharwood Smith 1972) and what Scovel (1972) attempts, on a much more limited scale, for verbs of perception in English, Spanish, French, Thai, and Chinese. Such studies seem to suggest that it is pedagogically more productive to frame contrastive statements such as, e.g., "one talks about the future in English (or sensation in Thai, etc...) by using the following forms," rather than such statements as, e.g., "the form *be + ing* is used for the following purposes in English".

Two considerations promote such descriptions of target languages, and one strongly militates against them. First, this order of presentation matches the hypothetical order of concern in the learner proposed above—that the learner seeks a path from reality to linguistic form, not vice versa. Second, although this notion is not fully expanded here, such an order of presentation seems to lend itself better to usage and appropriateness considerations:

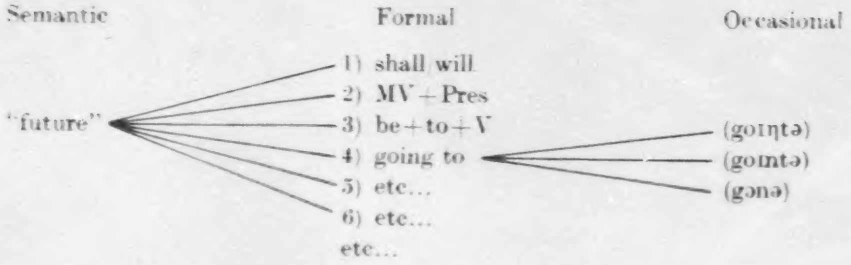
Semantic
Formal
Occasional
"future"
1) shall will
2) MV + Pres
3) be + to + V
4) going to
5) etc...
6) etc...
etc...
(goɪŋtə)
(goɪntə)
(gɔnə)

Figure 6

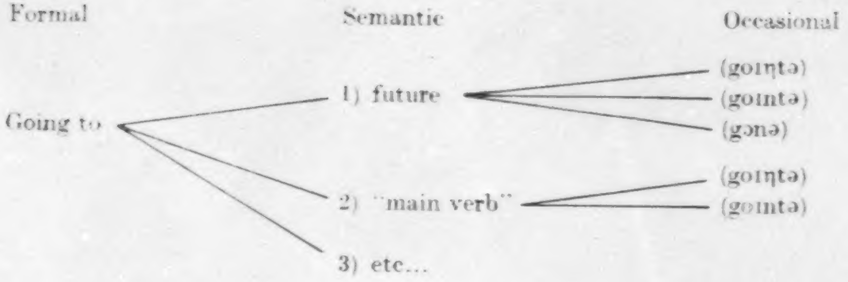
Formal
Semantic
Occasional
Going to
1) future
2) "main verb"
3) etc...
(goɪŋtə)
(goɪntə)
(gɔnə)
(goɪŋtə)
(goɪntə)

Figure 7

Although duplication of information eventually occurs in both systems, pedagogical grammars surely seek psychological rather than theoretical elegance. Although linguists may take delight in noting that the reduced form /gɔnə/ does not occur when the form *going to* (actually, *go + ing*, the *to* developed prepositionally) occurs as main verb, there is no psycholinguistic validity in suggesting that that fact takes precedence over semantic differential information.

Set strongly against this order of presentation (i.e. semantic – formal – occasional as opposed to formal – semantic – occasional) is, however, the obvious fact that there exist elegant syntactic descriptions of language, while no plan which would offer a partitioning of reality has ever achieved even minimal agreement among philosophers.

The remainder of this paper, then, concerns itself with the basically theoretical background for what began as a practical suggestion. What has been proposed for contrastive studies up to this point is represented in the following figure:

This expanded version of Figure 6 above, which allows for the incorporation of contrastive detail, may be compared with the following expanded version of Figure 7 above:

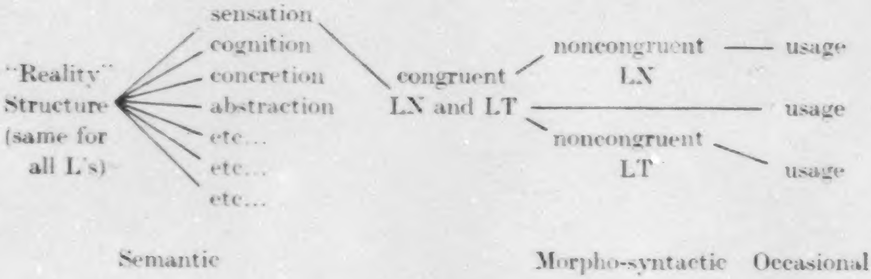
"Reality" Structure (same for all L's)
sensation
cognition
concretion
abstraction
etc...
etc...
etc...
congruent LX and LT
noncongruent LX
noncongruent LT
usage
usage
usage
Semantic
Morpho-syntactic
Occasional

Figure 8

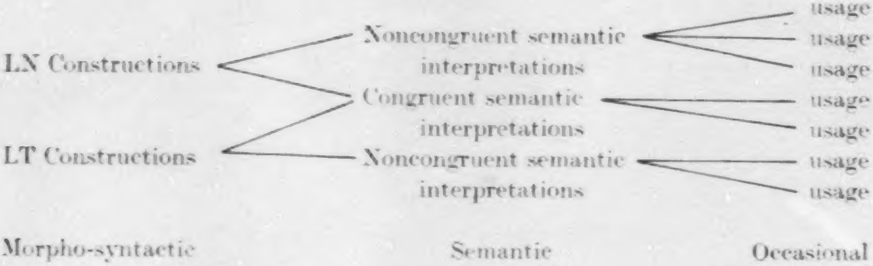
LX Constructions
LT Constructions
Noncongruent semantic interpretations
Congruent semantic interpretations
Noncongruent semantic interpretations
usage
usage
usage
usage
usage
usage
usage
Morpho-syntactic
Semantic
Occasional

Figure 9

Although the theory which provides for syntactic description in Figure 9 is "tighter" than any available philosophical theory for the first stage in Figure 8, the resultant duplication and confusion of description in Figure 9 (and its failure to match the learner's natural strategy in moving from reality to structure) suggest that deeper ("reality") structures offer a more convenient theoretical and pedagogically feasible base for practically oriented contrastive analyses. In short, answers to "How does one talk about X?" questions exist in Figure 8 at a deep (universal) level, while such questions must be answered from the middle of Figure 9, a solution which sends the learner in two directions for answers to questions about morphological, syntactic, and occasional correlates. In Figure 8, on the other hand, the learner moves from "reality" to forms to use, a progression which surely matches more carefully the psycholinguistic set brought by most learners to the data of a new language.

Two questions remain, and they are serious and annoying for the linguist who approaches the muddy point in contrastive linguistics where theory and application meet. In this case, for example, practical considerations seem to disallow use of the most elegant theory available. While teachers, textbook writers, and curriculum planners may be satisfied with that (They may even say "So what!"), methodologists and psycholinguists are aware that hundreds of experimental opportunities and many generalization for teacher training are lost if no coherent theoretical model stands behind explanatory classroom devices. (I should perhaps make it clear at this point that contrastive analysis, in my opinion, serves primarily an explanatory rather than predictive function).

Given this non-trivial concern for theoretical models behind language teaching, what theoretical forms can 1) be assigned to the general partitioning of reality indicated at the left in Figure 8, and, 2) be assigned to the internal structure of such items as "sensation", "cognition", etc... given one stage in from the left in Figure 8?

It should be clear that the leftmost subdivisions of Figure 8 are necessarily philosophical (phenomenological, if you will) rather than linguistic. On the other hand, category subdivisions, though given here in phenomenological terms, will have immediate linguistic correlates. That is, for the "deepest" level I have in mind some such subdividing as follows:

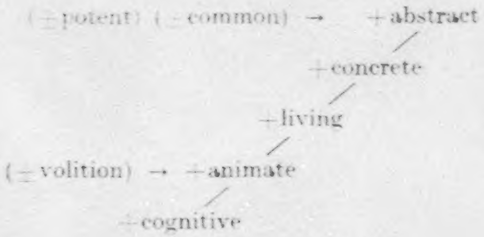

Figure 10

Such a tree as this, doubtless, is in need of much revision on the basis of phenomenological research; however, it attempts to capture the essentially non-linguistic categories of the world and display them in a hierarchy which could be assumed to promote features down the tree (that is, such features as ±potent, given at the level +abstract, are understood to operate at every remaining lower node of the tree). This is, then, the theoretical basis for the "reality structure" suggested as a universal base at the left of Figure 8 above. Of course to the right of each major category symbol given above is a hideously complex array of semantic classifications. For example, we might think of Sharwood Smith's classification of future reference in English (cited above) falling somewhere to the right of the +abstract entry roughly as follows:

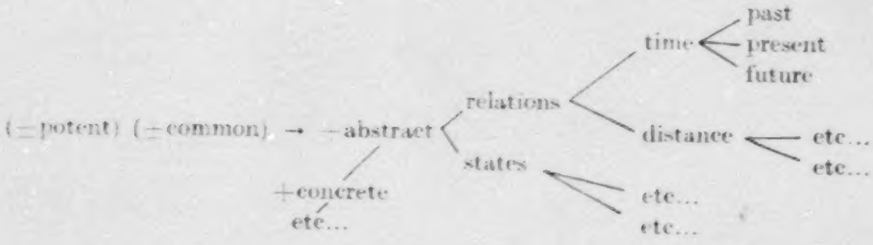
(±potent) (±common) → +abstract
relations
time
past
present
future
distance
etc...
etc...
states
etc...
etc...
+concrete
etc...

Figure 11

Of course, it may be immediately argued that we deal with relations such as *time* and *distance* as concrete rather than abstract entities in English, but this is the previously mentioned philosophical rather than linguistic problem inherent to this entire discussion. On the other hand, for the contrastive linguist as well as the learner, the further right we go in this philosophical diagram (that is, as philosophical complexity decreases), the more linguistically interesting the categories become. The far left is, quite naturally, interesting to the language philosopher, and it may, at some time in the future, provide a sound, theoretical basis for such descriptions of language, but what interests the learner is the everyday association he may make between reality and linguistic forms. For example, we might suggest that the category "sensation" fits into our more general diagram just one stage to the right of "animate" and that such subdivisions of sensation as "vision", "hearing", etc..., fit immediately to the right of that subcategory marker:

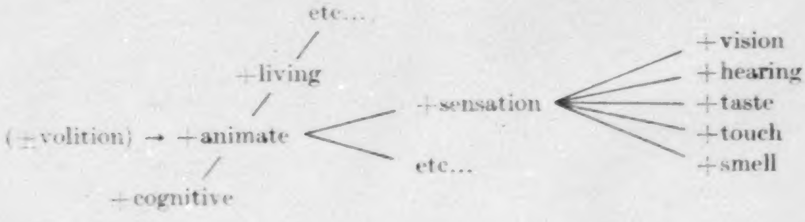
etc...
+living
(±volition) → +animate
+cognitive
+sensation
etc...
+vision
+hearing
+taste
+touch
+smell

Figure 12

Now we are dealing in terms which are as interesting to the ordinary learner as they are to the philosopher or semanticist, for such questions as "How do

I talk about SEEING in language X?" are just the sort of "reality" to linguistic form adjustment questions discussed above. Furthering the phenomenological analysis of just "vision" for English one more stage, we might produce the following:

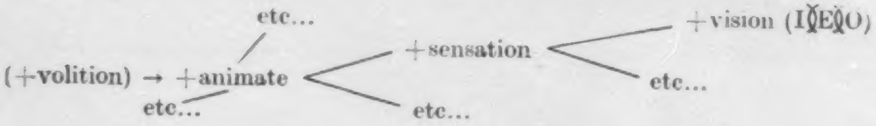

Figure 13

Let I, E and O represent "image", "eye", and "object", respectively (*object* here refers to concrete, beholdable things of the real world and has nothing to do with traditional, transformational, or Fillmorean functions, positions, or cases). Recalling that ± volition is a necessary addition to all items to the right in the +animate line, we may "print out" of this phenomenological component the following "strings":

+VIEO
−VIEO
+VIO
−VIO
+VEO
−VEO
+VE
−VE
+VI
−VI
+VO
−VO

Actually, of course, such strings are a reduction of ±volition (represented here by ±V), +animate, +sensation, +vision, and one or more of I ("image"), E ("eye"), and O ("object"). Though not established in the literature, I have taken three linked parentheses to mean take at least one of the symbols given or as many as desired. In these representations we have finally come to the end product of phenomenological rules and are ready for linguistic strings. The above sets might be represented by such strings as the following:

+VIEO	I looked at the table (patrzeć, oglądać)
−VIEO	I saw the table (widzieć)
+VIO	I'm looking at the table (e.g. in my mind) (patrzeć, oglądać)
−VIO	I see the table (e.g. in my mind) (widzieć)
+VEO	I'm looking at the table (e.g., but I can't see it) (patrzeć, oglądać)

–VEO	?
+VE	I'm looking around (rozejrzeć się, rozglądać się)
–VE	I can see (widzieć)
+VI	I'm looking at colors (e.g. in my mind) (patrzeć, oglądać)
–VI	I'm seeing pink elephants (widzieć)
+VO	I showed Jim something (pokazać)
–VO	My cuffs showed (widać, wyglądać)
	I look silly (wyglądać)

In such a list as this, phenomenological categories are most important, not linguistic ones. On the other hand, it is very obvious that some philosophical categories are very "unusual". It would be necessary to excise these odd realizations in order to avoid confusing presentation to the learner, though the contrastive analyst might be interested in a full presentation for all possible uses that might be made of the data. Here, for example, it is, obvious that high-frequency items include 1) ±VIEO, that is, sentences which assert that "volitionally or nonvolitionally I received an image by means of my eyes of an object", 2) ±VE, that is, sentences which assert that "volitionally or nonvolitionally I am making use of my eyes (though no object is focused on and no resultant image is produced)", and 3) ±VO, that is sentences which assert that "volitionally or nonvolitionally an object has been presented to vision". (We may assume that this last case triggers a kind of phenomenological recursiveness, but since that borders on discourse analysis, it is perhaps best excluded from this discussion).

From the above list it is fairly obvious that Polish and English cut up the reality of vision in more or less the same way, including a central volitional and nonvolitional pair. In fact, the only interesting items, though important enough for the learner, produced by this particular comparison are the different relationships of *show*, *look* and *pokazać*, *widać*, *wyglądać*. Similar contrastive lines for *smell* would reveal even more basic differences among *smell*, *sniff*, *stink* in English and *czuć*, *wąchać*, *pachnieć*, *śmierdzieć* in Polish, for example.

Such analysis would not replace the accompanying morpho-syntactic information necessary to such forms as they are presented. For example, whatever information is revealed about the semantic properties of *say* and *tell*, that is, about how they cut up the real world, it is eventually important for the learner to distinguish well-formed versus poorly formed strings:

Jack said that he had to leave.
**Jack said me that he had to leave.*
Jack said to me that he had to leave.
Jack told me that he had to leave.
**Jack told to me that he had to leave.*
?*Jack told that he had to leave.*

This paper does not at all question the importance of such information, but it does suggest that such concerns are rather distant from the language learner, particularly in his early contact with the new system. What is proposed here is a natural presentation of material which matches the learner's desire to find a match between the real world and the new language. It is equally important to realize that this proposal is exclusively practical. That is, the "system" suggested here has no importance for theoretical linguistics, for it tries to return to an unachieveable and probably incorrect systematization of reality as a precondition for progress in linguistics. I believe, with Polański, that "a full analysis of a sentence should consist of both its deep structure interpretation and a careful inquiry into its surface structure phenomena, which do not always depend on the deep structure" (Polański 1972 : 12). Such a proposal as the one given here for contrastive analysis ignores this reasonable approach to surface structure considerations only in hopes that it may bring some more reasonable solution to practical problems in contrastive analysis.

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IMPERFECTIVE VERSUS PROGRESSIVE – AN EXERCISE IN CONTRASTIVE PEDAGOGICAL LINGUISTICS

MICHAEL SHARWOOD SMITH

Adam Mickiewicz University, Poznań

The present paper is concerned with one particular problem in relating English and Polish which arises out of error analysis and which is best discussed at a level above that of the sentence. The reason for starting from actual recorded errors rather than from a purely theoretical model is a subject for discussion in itself. Suffice it to say here that, as the aim is primarily pedagogical the starting point is a pedagogical requirement, namely to correct a misinterpretation on the part of Polish students of English regarding the use of the English Past Progressive (or Past Continuous as it is often called) Tense. The hypothesis is that there is interference from Polish and in particular from its Perfective/Imperfective system. Apart from the pedagogical framework in which this contrastive paper is undertaken, there is a practical reason for starting from recorded errors. As Peter Robinson pointed out in a paper given recently in Dublin, contrasting two languages is a task of such enormity especially if one takes into consideration the limitations of time and resources, that error analysis is a very useful basis for choosing which areas of the two languages one should concentrate on. It certainly does not rule out theoretical models since the detection and analysis of language errors presupposes some kind of linguistic theory.

The reason for dealing with the present problem on the level of *text* i.e. interrelated sentences, will become apparent later. One might however reflect how much text as a level of analysis is profitable if not vital to contrastive analysis. This is especially true of a Polish-English contrastive project where the article necessarily figures as a major problem. Features such as the article, comparatives, demonstratives and pronominals need to be examined as features of text, i.e. as phenomena occurring supra-sententially. A sentence-based grammar is inadequate to cope with this type of problem unless it goes beyond sentence-embedding to units of text where *sentence* is a sub-unit. However the discussion here will not deal with the technicalities of text grammar but rather informally, with the problem as it confronts Polish students of English and a suggestion will be made for presenting this particular difference between the two languages in a readily comprehensible way.

The perfective/imperfective distinction in Polish is summed up in general terms in the well-known beginner's course *Mówimy po polsku*, thus:
"Almost all Polish verbs make their appearance in two forms (so-called imperfective and perfective form). A distinction should be made between their meanings. Imperfective verbs express the fact of the duration of an action as well as the fact of its incompleteness. Perfective verbs on the contrary, express the completeness of an action" (Bisko 1966 : 271).

Certainly some kind of link may be made between the meaning expressed by imperfective verbs in Polish and English verbs in their Progressive forms. The *Grammar of contemporary English* (Quirk et al., 1972) describes the features of the progressive aspect as firstly temporariness, as in:

1. *John is playing the banjo.*
Then it lists as "overtones", limited duration as in:
2. *The professor is typing his own letters* (these days).
incompletion as in:
3. *I was reading a book that evening.*
simultaneity, vividness of description and emotional colouring and emphasis, an example of the last overtone being:
4. *He was always getting his hands dirty* (my example).

Certain features held in common might induce the Polish learner of English to relate English progressive forms with imperfective verbs generalizing the meaning of incompleteness and a certain duration to form an ad-hoc equivalence in spite of the different formal realizations in the two languages. This would not be particularly surprising as language learners tend to start from the semantic end first and see how meanings are realized formally. They also like to make short cuts — according to the law of least effort. This at least seems feasible when we deal with past tenses. Thus:

5. *Czytałem list wczoraj.*
may be translated as:
6. *I was reading the letter yesterday* (but did not finish it).
and:
7. *Przeczytałem list wczoraj.*
is equivalent to:

8. *I read the letter yesterday* (to the end).

If we move upwards to the unit text we may cite an example which also seems to offer no problem:

9. *He opened his eyes. The sun was shining. He sat up. He looked through the window. The children were playing in the garden.*

The Polish equivalent would read as follows:

10. *Otworzył oczy. Słońce świeciło. Usiadł. Wyjrzał przez okno. Dzieci bawiły się w ogrodzie.*

Here the verbs expressing completed nondurative events are perfective in Polish and nonprogressive in English. The verbs expressing durative (i.e. lasting) event are imperfective in Polish and progressive in English. Thus:

COMPLETED	INCOMPLETE
opened/otworzył	*was shining/świeciło*
sat up/usiadł	*were playing/bawiły się*
looked/wyjrzał	

Such examples confirm the ad-hoc rule of equivalence. However if we now take example 11. we come to the snag:

11. (*Biedny Jan*), *przez pierwsze trzy kilometry szedł a przez następne dwa biegł*.

Here the durative character of the walking and running is signalled through the use of the imperfective verbs *szedł* and *biegł*. First there was a long period of walking and then there was a long period of running. The Polish learner of English would be tempted as often seems to be the case to translate this as follows:

12. **For the first three kilometers he was walking and for the next two he was running.*

This is an erroneous translation. It is just feasible that a native speaker might assign some kind of dramatic descriptive interpretation to it but the normal equivalent would be as follows:

13. *For the first three kilometers he walked and for the next two he ran.*

The use of the nonprogressive Past Simple Tense does not in any way obliterate the idea that the two events seemed to last a long time and we could certainly begin the sentence with some such expression as: *poor old Jan* to make this clearer. What does seem to matter here is that the event signalled by the nonprogressive verb moves the narrative on one step, chronologically speaking. That the event seemed to "have duration" is not important. The fact is, it is a completed action and one step in the narrative. This does not hold true for Polish where you can separate two imperfective verbs with a time expression like *potem*.

The English nonprogressive Simple Past, then, performs a certain function in a narrative text. Three instances grouped side by side represent three steps in the narration as for example in Caesar's famous statement:

14. *I came. I saw. I conquered.* (*Veni. Vidi. Vici.*)

If, on the other hand, we group three instances of the progressive form of the verb side by side, then it is clear that the events described are to some degree simultaneous as in:

15. *His legs were shaking. His hands were trembling and his left cheek was twitching uncontrollably.*

These two facts can also be illustrated within one sentence as in the following two examples:

16. *When they arrived on the beach, they leapt ashore and ran towards the islanders.*

17. *When I was laughing, John was shouting and Mary was crying.*

We may say that the English nonprogressive tense fulfils a *narrative function* moving the action on chronologically. The progressive tense on the other hand fulfils a *descriptive function* describing "what was going on" at a given point in time. Interestingly enough, the progressive form depends on this point in time being given by the context (linguistic or situational) usually in the form of a time adverbial like *yesterday at 5 p.m.*, or by a nearby nonprogressive verb. In a simple narrative text the nonprogressive verbs form the basic framework on which the progressive verbs, rather like bound morphemes, depend for their existence. Although both *I went home* and *I was going home* demand some context to explicate the full meaning, *I was going home* somehow impels the listener or reader immediately to search for some specific time or some action with which to relate it directly. It is describing or filling out a point in the narrative without which it is meaningless. If we take a text with a string of progressive verbs, all the states or actions described by these verbs relate to a part of the narrative establishing a point in time. This is often a nonprogressive verb which lies adjacent to the progressive verbs. It may come before them as in:

18. I drew *the curtains apart. The sun* was shining. *The children* were playing *in the yard. Some women* were hanging *clothes on the washing lines.*

or it may come afterwards as in:

19. *The coach* was coming *round the bend. Its wheels* were bumping *against the side of the road. The driver* was shouting. *Hoss Cartwright* drew *his gun.*

In both cases the actions described progressively are understood to be more or less simultaneous and taking place during the event described by the nearest nonprogressive verb *drew*. This is obviously not a characteristic of the Polish imperfective verb which can appear next to another imperfective verb and signal a move in the narrative on to the next step as is exemplified in 11. (*Biedny Jan*, etc.) In other words, Polish imperfective verbs seem just as capable of performing what has been called the narrative function as perfective verbs. Yet in a text like the following:

20. *I took the child to the clinic. The doctor examined him for a long time very carefully. Finally he pronounced him healthy.*

many Polish learners would be tempted to write or say *was examining* and would be surprised to learn that the result sounds very odd to the native speaker of English.

As far as pedagogical solutions are concerned, there is obviously a remedial problem here to counteract Polish interference and as far as university students are concerned and sophisticated adult learners as a whole, there is no reason why the problem should not be explained in notional terms in much the same manner has been done here, as a small sample of contrastive pedagogical grammar. In an experimental written English exercise devised last year in Poznań to remedy the problem, the symbol (N) was used to represent the narrative function and the symbol (D) to represent the descriptive function. Students are asked to write short texts based on a sequence of these symbols together with a corresponding sequence of suggested verbs. At first simple sequences of (N) are required, for example, (N.N.N) using, say, the verbs, *run*, *climb* and *jump*. A realization of this pattern would be as follows:

21. *The prisoner* ran *to the wall.* He climbed *to the top and* jumped *down to the other side.*

Then the required pattern can be varied and dependent (D) verbs brought in. For example one pattern is (N.D.D.) with all the D's of course dependent on the N. Using the same verbs as before we might arrive at the following small text:

22. *The prison guard* ran *to the wall. Two convicts* were climbing *to the top. Another* was *already* jumping *down to the other side.*

A freer section gives a pattern but, instead of verbs, just a general situation such as "A prison escape" or "A teacher collapses in class".

Pedagogical solutions need not, contain such overtly contrastive statements as the exercises here suggest. Adult learners probably appreciate this cognitive approach to materials construction. However a more concealed planning of materials of the pattern drill type certainly profit from contrastive insights. Ideally teaching exercises should be text-based and especially in the case of exercises teaching the English Past Progressive and Simple Past to Polish learners. Learners should be forced overtly or covertly to look for the function of verbs within the text rather than rely on a vague feeling for the independent meanings of particular tenses and they should be prevented from making their own contrastive decisions which may prove misleading. In learning a second language, the presence of the native language must play some role. The teacher and materials writer cannot afford to overlook this. If they do not take steps to exploit and to channel the learner's assumptions about the target language that derive from his own language, however subconscious, they are simply allowing him to construct his own private contrastive grammar. In talented learners this may be all right but for quite a number it could be disastrous.

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ASPECTS OF FUTURE REFERENCE IN ENGLISH AND POLISH

MICHAEL SHARWOOD SMITH

Adam Mickiewicz University, Poznań

1.0. In this paper I wish to discuss three topics. The first relates to the proper starting point of contrastive studies which have language teaching aims. The second relates to the discussion of future time and how best to analyse it with respect to a given linguistic code, and the third is an illustration, in a somewhat fragmentary form, of how such an analysis may be applied to presenting future reference in English and Polish.

2.0. Any contrastive paper needs to begin with a definition of its scope and relevance. Does it, for example, aim at a very abstract and technical analysis of language contrasts according to a specific linguistic theory — what I would call a *first-order application* of linguistic theory (Sharwood Smith 1972, 1974) or does it have some more practical extralinguistic goal such as a pedagogical grammar or machine translations — what I would call a *second-order application*.

2.1. This paper has as its scope the area termed pedagogical linguistics (Krzeszowski : 1970; Sharwood Smith: 1972) which I define as the area of language pedagogy which specifically deals with linguistics and its direct offshoots to see what insights, if any, may be used in the field of language teaching. Language pedagogy and its subdiscipline pedagogical linguistics ('the applied linguistics of language teaching') belong to an area of knowledge which admits of serious academic study with its own needs and its own criteria for selecting insights from related fields and combining them into its own hypotheses and theories. From these studies a body of scientifically justified materials may emerge, one of the most important being pedagogical grammars. A type of pedagogical grammar that can be used for specified types of learners is what concerns us here, i.e. contrastive pedagogical grammar.

2.2. The contrastive analysis I shall outline here is oriented towards a cognitive view of language teaching, to what Bruner calls "hypothetical learning"

(Bruner 1962, Estacio 1971). Here the learner is made conscious of rules governing the language code and its use rather than absorbing them subconsciously through association and habit formation. In present terms this would also involve consciously studying and using the similarities and differences between two languages. Outlining the links between the native and target language in a systematic and meaningful way will help the learner appreciate his task more clearly: where not to make generalizations as well as where useful analogies may be drawn between the system he knows and the system he is to learn... It will also facilitate a conscious translation process which may be very helpful in the acquisition of the target language as a learning strategy to be discarded at a later stage. This approach is pure heresy to confirmed audio-linguists who see the native language purely in terms of negative transfer. The cognitive view counters this by pointing to the need for linking new facts with those already in the learner's cognitive structure (Ausubel 1968) and not pretending (in the classroom at least) that the native language does not exist. Finally, it should be pointed out that a contrastive pedagogical grammar can serve both schools if only as a basis for the production of teaching materials which either exploit the interlanguage links or steer the learner clear of them.

2.3. There is another important aspect of the proposed analysis and that is notionally oriented. This is so mainly because of the extra-linguistic needs of the language learner that any pedagogical grammar has to take into consideration. We cannot simply base language descriptions (for the learner) on purely syntactic criteria and show the learner what syntactic well-formedness in the target language consists of. We must try to begin from the other end and ask: what functions does a learner need the target language for and how does the target language enable him to perform these functions? The functions will be partly psychological, partly sociological and difficult to systematise. Given the fact that work in these fields is already well on the way to providing useful categories and that the level of sophistication and abstraction required is relatively low (given the fact that the grammar is for teachers and learners rather then professional linguists), there is no reason why an analysis based on extralinguistic needs is not feasible. Here these needs centre around desire of a given learner to talk about states and events that do not exist yet at the time of utterance. It would be discouraging simply to inform the Polish learner that there is no future tense in English because no syntactic grounds exist to justify it. He has certain expectations that his own language, which has more than one verbal tense form specifically for future reference, provides him with. A pedagogical grammar has no right simply to send him off on some complicated detective work to see how this apparently impoverished language enables the speaker to refer to the future. The pedagogical grammar should have already done the detective work for him! It should provide him with the answer to the question: how does one refer to the future in English and, if it is to be a contrastive grammar, it should make explicit the relationships between English and Polish in their handling of this same problem. There is no reason, to turn Palmer's reminder round on its back (Palmer 1965 : 8), why we should not use formal syntactic criteria to help us in arriving at our notional semantic categories. They will remain notional nevertheless. The main emphasis of the grammar remains extralinguistic and the syntactic regularities of language, though not ignored, are treated as secondary. The only other thing that must be respected as being of primary importance is the difficult responsibility any grammarian has of making clear systematic and basically accurate statements about the language he is describing. These statements should be comparative in the first instance, rather than contrastive and show the learner how language A and language B, in this case English and Polish, which have many formal syntactic differences, provide answers to identical or similar notional (extralinguistic) demands.

3.0. The notional analytic framework used here derives from the theory of speech acts (Austin 1962) as exploited by Boyd and Thorne (1969) to describe the semantics of English modal auxiliaries and further exploited pedagogically by others (e.g. Sharwood Smith 1971, 1972; Jarvis 1972). The pedagogical advantage of such an approach is that it sets out explicitly to account for the two semantic elements in any modal utterance: the propositional element e.g. *Peter's feeling ill* and the illocutionary element which is information passed from the speaker to the hearer and is relevant to the time of utterance e.g. *I guarantee you; I promise you; I order you;* etc. Thus, that the speaker guarantees Peter's feeling ill or, less unpleasantly, predicts it, is expressed as follows:

Peter will feel ill.

To take another example, the speaker may inform the hearer that a future event is planned. Thus the difference between *The President will arrive tomorrow* and *The President arrives tomorrow* is that the first may be represented as: "I, the speaker, predict now that in the future (tomorrow) the President arrives," whereas the second may be represented as "I, the speaker, inform you now that there exists a plan now that the President arrives in the future (tomorrow)". Predication, promises, commands, announcements of plans are some of the different kinds of present time information that is conveyed by the speaker at the time of utterance. The present analysis is confined mainly to future reference in the restricted sense where prediction and futurity are more emphasized then what is usually understood by modality e. g. permission, possibility, etc. It is difficult to separate modality from future reference particularly with regard to *shall* and *will*. The speech act analysis was first applied to modal verbs in the standard sense (*must, may, can,* etc.). These are of course not necessarily future referring. *Peter may be ill* may refer to the present or the future. Here we will discuss forms which are always future in one way or other, or forms which, when used in the present have a double meaning, e.g. the Present Progressive form in *I am reading a poem* (present reference: *I am reading the poem at the moment* or *I am in the middle of reading it now* as opposed to future reference: *it is arranged that I read a poem* or *I have agreed to read a poem*, etc.). A complete pedagogical grammar would probably contain modals and forms of future reference in one section using the same framework.

4.0. Coming now to the third part of my paper, I would like to show how the speech act style of analysis can be used contrastively. I must apologise for the fragmentary nature of the illustration particularly of the Polish part. A more detailed presentation of the English section is to be found in Sharwood Smith (1972). The Polish part is based on an analysis and discussion of Polish future reference by fifth year students of English at Poznań University.

5.0. In English, it turns out that future reference is expressed mainly by the following forms: WILL+MV (main verb), SHALL+MV, BE GOING TO+MV, BE TO+MV and the two grammatical Present tenses (Simple and Progressive). We may add to this a set of more complex forms as expressed in the following verb phrases using TAKE: 'will be taking, will have taken, will have been taking, will have been taken'. The forms betray a much greater number of meanings and this has led a many to describe meanings in terms of form (form 'x': meanings X_1...n). Here we try to rationalise the meaning using the speech act framework for reasons given above and then attach the forms to the semantic categories (meaning X: forms $_1$...n).

5.1. In present terms the speech act can be reduced to two components which are labelled P(present information passed from speaker to hearer at the time of utterance) and F(the state or event in the future). Following this we get a number of sentence schemas which correspond to a number of different characterisations of P. P signals the basic meaning associated with verbal form it calls for. This is an important point because much of what has been associated with future-referring verbal forms turns out on closer inspection to be "accrued" meaning, i.e., meaning accrued or gathered from the context (linguistic and extralinguistic) or from the more subtle associations between verb forms and their history or meaning in other contexts. I refer here particularly to the form *will* which, in my dialect of English, rarely has the aspect of volition or intention attributed to it. In *he will go to Karpacz*, there may be a suspicion of volition but this is more from the association with the main verb *to will*, the noun *will* or the association between a verb which admits of human agents and a pronoun marked as human and animate or even the rare occasions where *will* retains its older meaning (*if you will*) than from its basic meaning. The semantic schemas are based on the basic meanings of forms available in the language. *Going to* is another case in point. If we say ***Tom is going to read a paper in Karpacz*** or ***Tom is going to drink some fresh milk***, we may decide to describe the meaning of the form as intentionality. Even more obvious is the intentional aspect of the announcement: ***I am going to read a paper in Karpacz***. But if we were to add ***against his will*** or ***against my will***, there is no paradox or inconsistency. Moreover in sentences like: ***It is going to rain*** it is clear that no intentionality is involved unless one posits a malevolent deity. Even using *I* or ***he*** we can exclude intentionality by using verbs that do not admit of human control such as *be* in ***be sick*** or *lose*.

5.2. In English, if we leave aside the second more complex set of forms (of Sharwood Smith 1972) we may establish three primary categories of speech act, i.e. three sentence schemas from three types of P. Each schema is here given a pedagogical dummy symbol for speedy reference, mnemonic value and use in cognitive drills. They are:

1. Simple Predictive Future.	O—O
2. Impositional future.	—I— or — —
3. Preplanned Future.	PLAN

These refer of course to three primary notional categories and not three verb forms. They may each be realised by one or more verb forms which we will call "exponents".

5.3. The Simple Predictive Future relates to what has often been called the pure or colourless future. All future sentences are predictive to some degree but this type of future is the least coloured by any additional present information, i.e. aside from predictiveness. It is characterised as: I PREDICT. Its exponents in my English (Standard English / English) are *will*, *'ll* and *shall* (usually in first person questions) and *going to* (although this latter form may suggest a new category: future of present indications (cf. the writer's forthcoming Ph.D. thesis in progress)). Thus, for example, a representation of Peter's coming home tomorrow in this schema would be presented as follows:

I PREDICT: *Peter (come)* ***home tomorrow***.
and using the available English exponents we would obtain:
for example:
Peter will come home.
Peter'll come home.
Peter is going come home.

Peter's going to come home.
Basically all mean the same thing. The pedagogical grammar will of course provide extra information if necessary. For example *going to* is used where the future state or event is predicted without any idea of contingency (McIn-

tosh 1966) whereas the "*ll*" forms are often used where the event or state depends on something else happening in the future. Compare: *I'll fall over* (if you go on rocking the boat) and *I'm going to fall over* (so please catch me!).

5.4. In the Impositional Future, a category that would go together with the modal meanings if we were to be strict, the speaker imposes a future state or event upon himself in the form of a promise or personal guarantee or the speaker imposes the state or event upon the speaker. This gives us the two subtypes of imposition: self imposition (—I—) and vocative imposition (— —). Thus the proposition *finished the bottle* might be realised

as: I IMP *me: I (finish) the bottle (I will finish the bottle*, etc.)
or: I IMP *you (finish) the bottle (You shall finish the bottle*, etc.)
or: I IMP *me: Peter (finish) the bottle (Peter shall finish the bottle*, etc.)
or: I IMP *some person(s): Peter (finish) the bottle. (Peter shall finish the bottle*, etc.)

In the last example the agent is unspecified or understood as in a royal decree or command: (*He shall die at dawn*). Exponents of impositional Future are *will* and *shall* in all persons and *be to* in the second and third persons.

5.5 Preplanned future is so called because the speaker communicates the fact that there exists some fixed plan, decision or arrangement concerning the state or event in the proposition (F). The exponents of this schema are the two present tenses. There is always a future time adverbial in the text associated with the utterance unless the situation makes it redundant. There is no sense of obligation in this plan. If we say *Peter comes/is coming tomorrow* we just give the idea that it is expected by virtue of some prearrangement or decision known by the speaker. The pedagogical grammar might subdiivide them into formal and informal preplanned future (Simple versus Progressive Present) or simply supply this as extra information. It seems that the Present Progressive is particularly associated with informality even in other non-future contexts (*I am looking forward* versus *I look forward*). Like Polish aspect, informality is not specifically linked with future reference.

6.0. If we now look, briefly, at the Polish system we can observe how it differs from English. This is of course Polish seen with English eyes. Ideally an independent system should be set up and then the attempt to relate them logically follow this. As with English, we may generally exclude intention and volition from our description of basic meanings despite a tendency of native informants to be tempted by accrued meaning (especially using examples in the first person singular).

6.1. Taking the Simple Predictive Future first, we find that this meaning is expressed by the Polish Future Simple. Thus:

O—O: Piotr (przyjść) or, in other words: PRZEPOWIADAM: *Piotr (przyjść)* is realised as:

Piotr przyjdzie.

And immediately the system shows us the corresponding English alternatives.

Peter 'll come

Peter's going to come, etc.

When we come to the Impositional Future, the Future Simple tense can again be used which suggests a convenient practical correlation with the *will* form in English. Thus, if I promise to come tomorrow (using *zobowiązuję się*/*kogoś* for the two subtypes of IMP) I can say:

ja : *Ja (przyjść)*

realised as:

Przyjdę.

Or, if I wish to guarantee Piotr's coming

ja *Piotr (przyjść)*

realised as:

Piotr przyjdzie

And if I wish to impose the state or event on somebody else including the hearer, then *mieć* + MV may also be used. Thus the king may say either: *Umrze o świcie* or *Ma umrzeć o świcie*. There seems to be a correspondence between *mieć* + MV and *be to* + MV. Finally, the preplanned type of future is also expressed by the grammatical Present tense. Thus:

— — : *Piotr przyjść) jutro.* (INFORMUJĘ O UMOWIE. etc.) is realised as:

Piotr przychodzi jutro.

Piotr ma przyjść.

Additional information would be provided in the grammar to distinguish the two verbal forms used above on a cline of certainty, the first being of a more fixed nature and the second admitting of a possible change of plan. This of course is not identical to the formal/informal distinction in the two English present tenses.

6.1. A mention should be made of the Polish Future Composite tense (*być* in the future + INFIN/PAST BASE FORM). It seems to be the case that in English the complex from, e.g. *will be taking* carries not only the emphasis on futurity (through simple predictive *will*) plus progressive aspect (through the -*ing* form but also an idea of preplannedness (cf. informal preplanned future). The meaning is then a combination of future emphasis and preplannedness. Interestingly enough, the Polish Future Composite Tense also seems to carry this combination of meanings as in:

On będzie zdawał egzamin

Perhaps it is no coincidence that the Future Composite may only be used with Imperfective aspect (but see Sharwood Smith, "Imperfective versus Progressive" (1974) for the dangers of over-relating aspect in English and Polish)

7.0. Summing up, working within the area of pedagogical linguistics, according to a notional cognitively-oriented approach, we have begun to answer the question: how do we refer to the future in English and Polish? Using the speech act framework, future reference has been subcategorised into a small number of schemas which allow us to relate in a meaningful way various verbal forms in English and in Polish for the benefit of the language teacher and the language learner. Much work remains to be done and the present paper is presented as a pointer rather than the end product.

EXAMPLES

O— *Peter (come)* ⇒ *Peter'll come*, etc.
Piotr przyjdzie.
—J— *Peter (come)* ⇒ *Peter will come*, etc.
Piotr przyjdzie
— — *Peter (come)* ⇒ (*ditto*)
Peter is to come:
Piotr ma przyjść
— — *Peter (come)* ⇒ *Peter's coming (tomorrow)*, etc.
Piotr przychodzi (jutro), etc.

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SYNTACTIC AMBIGUITY AND THE TEACHING OF WRITTEN ENGLISH TO ADVANCED POLISH LEARNERS — GRAMMAR OR STYLE?

ELŻBIETA MUSKAT-TABAKOWSKA

The Jagellonian University of Cracow

The aim of this paper is to present some results of linguistic investigation, carried out along the lines specified by the present author in the article "Syntactic ambiguity and the teaching of written English to advanced Polish learners" (1974). Accordingly, the following assumptions were accepted as the points of departure for the discussion:

1. In natural languages, syntactic ambiguity occurs more frequently in written than in spoken medium (for discussion, cf. Kooij 1971), and it is its function in the syntax of written language that proves more significant for the investigation of language use. Seen in the context of foreign language teaching, this type of ambiguity must be considered a shortcoming on the part of the language user: in expository prose, in general the only kind of writing employed by non-native writers, the basic requirement on the form is that it does not interfere with understanding the message, i.e., does not present interpretation problems. In this sense, syntactic ambiguity is legitimately viewed as a teaching problem.
2. With ambiguity being an inherent property of natural languages, the purposes of language communication require that it is in the majority of cases resolved by context or situation; the danger of misunderstanding is practically restricted to those cases in which disambiguating factors prove to be inadequate. Consequently, with such an approach, the consideration of the context of an ambiguous sentence becomes a necessity and the analysis of samples becomes token- rather than type-orientated (cf. Kooij 1971, esp. ch.1).

3. When defined as in 1. and 2. above, syntactic ambiguity can become a source of stylistic errors and, consequently, it will constitute a part of error analysis. Thus, explanations will be legitimately looked for among such phenomena as transfer and interference and will call up for contrastive techniques, even though it is the surface structure that will be used as a starting point for the investigation (this approach is well justified by the fact that stylistic errors are found in sentences which are *unacceptable* but *grammatical*). The function of error analysis as a preliminary towards contrastive study aimed at formulating pedagogical suggestions as well as the necessity for a closer link between linguistic research and its practical application have been frequently postulated in recent works on the subject[1].

It seems that an analysis of syntactically ambiguous sentences as they are produced by foreign (Polish) learners, when carried out in terms of the above assumptions, might prove interesting in view of both linguistic theory and teaching practice[2]. It can supply the linguist with some valuable insights concerning the two languages that are being contrasted, and the teacher — with a starting point for contributions towards the development of more systematic techniques of teaching. The importance of non-ambiguous writing has long been realized by numerous textbook-writers (e.g. Levin 1966 ch. 3; Guth 1965: ch. 1; Arntson 1961: ch. 7; Nichols 1965; Laird et al. 1963; McCrimmon 1963; Kaplan 1968, and many others), even though none of them has offered a systematic description or explanation of this problem.

The analysis presented below resulted from purely practical considerations. When reviewing a textbook of English, written for Polish students by a Polish teacher, o came across the following sentence:

I. *Here is a list of verbs which most often present difficulties given in key sentences with translation into Polish.*

Following the above text, there come some English sentences each of which is accompanied by its Polish equivalent.

Obvious difficulty involved in interpreting I. fully justifies the search for explanation of reasons of the problem, the two potential possibilities being

1. I. is ungrammatical,
2. I. is grammatical but in some sense unacceptable.

The decision, confirmed by the uniform opinions of three native informants, two Englishmen and one American, seems to be in favour of the second alternative.

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[1] Cf., e.g., some of the papers read at the 4th conference on contrastive linguistics (the Polish-English Contrastive Project, 1973).

[2] For a more detailed discussion, see the earlier paper by the present author which was referred to.

The following interpretation was suggested:

Ia. *Here is a list of verbs that most often present difficulties that are given in key sentences with translation into Polish.*

That was chosen as surface realization of the two relative pronouns in order to set off the restrictive character of both relative clauses. (For a discussion of *that* as an element of surface structure differentiating between restrictive and non-restrictive clauses, cf. e.g. Stockwell et al. 1968). *That* and *which* will be used to indicate, respectively, restrictive and non-restrictive (appositive) clauses throughout the following discussion.

Ia. is semantically unacceptable, both in view of the context and common sense reasoning (i.e., the low probability of all difficulties that English verbs present for a Polish learner being exemplified and then translated into Polish). Since the only plausible interpretation of I. proves unacceptable, it could not have been meant by the author. The above, in turn, makes one justified in thinking that there is a possibility of an error. Indeed, the most obvious possibility seems to be a mistake in the application of punctuation rules. It must be mentioned at this point that punctuation, used in graphic representation of language, is merely a convention based on the systematicality of grammatical structures. Thus it is only an imperfect and arbitrary reflection of juncture and intonation patterns, this fact being one more argument for the necessity of clear writing.

According to the general rule, frequently formulated in traditional grammars of the English language (e.g., Sometimes (sic!) participle phrases should or should not be punctuated according to whether they are linked with the subject or the object in the sentence', Gethin 1965: 43), a comma must be inserted in front of the second of the two relative clauses. Thus we obtain:

II. *Here is a list of verbs which most often present difficulties, given in key sentences with translation into Polish.*

It is easily seen that the comma (intonation), required after the first relative clause, does not facilitate the interpretation of the sentence. Its length is not excessive, such that might make it unacceptable because of the restrictions on memory retention, and moreover, no violations of grammatical rules of English are seen; the unacceptability of II. must, therefore, be the result of its excessive syntactical complexity and/or ambiguity: it is generally recognized that the more heavily transformed the sentence is, the greater is the likelihood of ambiguity.

It will be postulated that the surface realization of II. can be reduced to the following sentences:

II. 1. *A list of verbs is here.* (The matrix sentence that has run through the stylistic transformation of permutation. The sentence-dominated

NP is the genitive derived from, e.g., II. 1. a. *A list contains verbs*[3], with a middle verb between NP_1 and NP_2).

II.2. *Verbs most often present difficulties.* (The first insert, realized as a restrictive, non-reduced relative clause).

The non-ambiguous reference of the N[+Wh] in II. is due to the lexical material in II.1. and II.2. Note, however, the recognized potential ambiguity of the construction $NP_1 + prep + NP_2 + relativization$:

II.3. *A list of verbs that most often present difficulties is here,*

$$\begin{bmatrix} +N \\ +Sg \\ \cdot \\ \cdot \\ \cdot \end{bmatrix} \quad \begin{bmatrix} +N \\ +Pl \\ \cdot \\ \cdot \\ \cdot \end{bmatrix} \qquad\qquad \begin{bmatrix} +V \\ +Pl \\ \cdot \\ \cdot \\ \cdot \end{bmatrix}$$

but, e.g.:

II.3.a. *Lists of verbs that most often present difficulties are here.*

$$\begin{bmatrix} +N \\ +Pl \\ \cdot \\ \cdot \end{bmatrix} \quad \begin{bmatrix} +N \\ +Pl \\ \cdot \\ \cdot \end{bmatrix} \qquad\qquad \begin{bmatrix} +V \\ +Pl \\ \cdot \\ \cdot \end{bmatrix}$$

As this kind of ambiguity does not actually occur in II., it need not concern us at this point. However, being a frequent error of style (cf., examples of students' written work, quoted further in this paper), it must not be ignored by the teacher.

The second insert into the matrix II.1., however, is actually in itself at least four ways ambiguous. It will be postulated that this fact is due to the 'intervening' comma, which implies some significant consequences for the semantic interpretation of II. The second insert

II.4. *given in key sentences with translation into Polish,*

is hypothetically reduced to the following underlying structures:

II.4.1. *A list of verbs is given in key sentences...*

II.4.2. *Verbs are given in key sentences...*

The ambiguity illustrated in II.4.1. and II.4.2. is due to the fact that II.4. is a reduced relative clause, which has run through the optional transformation of N[+Wh], be deletion. This transformation erases the surface realization of such features as e.g. number, an important disambiguating factor (cf. II.3 and II.3. a. above)[4]. Another possibility of interpreting II.4. is

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[3] For discussion, cf. Nagucka (1971). The assumptions concerning application of rules formulized or postulated inside the framework of transformational grammars for contrastive error analysis were formulated in the first part of the rpesent study. The discussion that follows is highly informal; I found it both profitable and economical to avail myself of any TG rules that help to elucidate the points under discussion.

II.4.3. *Difficulties are given in key sentences...*

The comma (intonation) after the VP-dominated NP in II.3. does not permit the interpretation of II.4. as a restrictive modifier on this NP, cf.,

II.4.4.* *...difficulties, that are given...*[5]

However, no grammatical restrictions (cf. Stockwell et al. 1968: 448; Thomas 1965: 156 ff) block the interpretation of II. as a sequence of two conjoined sentences, with the second conjunct inserted into the first:

II.5. *A list of verbs that most often present difficulties is here, and these difficulties are given in key sentences with translation into Polish*[6].

In fact, the comma actually blocks the interpretation of II.4. as being restrictive on any head NPs of either II.4.1. or II.4.2. This seems to illustrate the systematic difficulty involved in such usage of comma. Namely, if a (reduced) relative clause is preceded by a comma, inserted in order to prevent the clause from being interpreted as restrictive on the last (i.e. rightmost) noun of the main clause, this relative clause must be interpreted as an appositive. It was noticed by R. H. Gethin (1965: 47), who says that by inserting this type of comma 'we have willy-nilly begun to turn the relative clause into a non-defining [i.e. appositive — EMT] one and we must complete the process by placing [another] comma [at the end of it]'.

Finally, II.4. can be interpreted as a sentence modifier, i.e. the appositive relative clause that modifies the entire proposition. Thus it would be treated as a reduced clause; an absolute construction that expresses time and/or cause relationship[7]. Unlike full temporal clauses, such reduced adverbials are not permuted freely with the main clause. Though rules of this type of permutation have not yet been formalized, sentence-initial position or the position immediately following the S-dominated NP, is generally accepted to be most regular, also with participles. In case of phrase-heading participles, however, extraposition to the end of the sentence is considered acceptable (cf. e.g., Pasicki 1972: 104; Schwartz 1968: 759).

It will also be noticed that each of the above four interpretations involves an additional case of structural ambiguity, resulting from the fact that II.4.

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[4] Consequences of this type of deletion (i.e. grammatical neutralization) for the interpretation of sentences are given in Kooij 1971.

[5] A discussion of this property of restrictive clauses is found in Stockwell (1968: 448).

[6] This derivation hypothesis is discussed in Stockwell (1968: 448).

[7] Frequent overlapping of these two interpretations, as well as the surface identity of resulting sentences, is discussed in Pasicki (1972: 96, 97).

is in itself ambiguous, because of the ambiguity involved in the derived nominal *translation*. Any attempt at suggesting its derivational history, in view of the controversy in this respect between the transformationalist and lexicalist approach[8], goes well beyond the scope of the present discussion. As a frequent source of ambiguity, nominals would require a separate and more detailed study. For the purposes of the present argument, it will suffice to mention that the lack of specification of the nominal as it occurs in II. theoretically allows for any of the following readings:

II.4.a. ... *given in key sentences, with translation of* $\left\{\begin{array}{l}\textit{verbs}\\ \textit{list of verbs}\\ \textit{difficulties}\\ \textit{key sentences}\end{array}\right\}$.

Such a type of ambiguity is believed to be a highly universal property of natural languages (cf., the discussion on neutrality in Kooij 1971: ch. 4).

What makes the situation even more complicated is that the nongerundive nominal in II.4.a. also seems to imply still another possibility of ambiguity, which is maintained to be systematic for transformationally derived nominals i.e., the opposition between the 'manner' and 'object' sense. The context obviously calling for the second of these, disambiguating would require the addition of the plural morpheme[9], cf., the nonambiguous (in this respect!) sentence

II.4.b. ... *given in key sentences, with translations...*

Out of the four possibilities implied by II.4. (each of them additionally burdened with the ambiguity shown in II.4.a.), some are ruled out, either for semantic or syntactic reasons. Thus II.4.3. is impossible in view of the context (cf., the discussion on I. above), while the interpretation shown in II.4.2. is blocked by the restricton on English relativization, formulated in Stockwell (1968: 520): 'in a series of relative clauses, if the first clause is not reduced, none of the following clauses may be reduced if they are also on the same noun'. Moreover, the ambiguity of II.4.a. is resolved by the context of II., in favour of the last of the possibilities shown above. The other interpretations, which might be acceptable in different contexts, are attested in the following paraphrases, offered by the native informants:

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[8] In his earlier works on transformational derivation Chomsky considered nominals to be products of nominalization transformations which operated on sentences of the type SOMEBODY DID SOMETHING (c.f. Chomsky 1965). This position, however, has been since revised (cf. Chomsky 1968) towards the acceptance of the lexicalist hypothesis, at least for the derived nominals.

[9] For details, see the discussion of Lees' *Grammar of English nominalizations* (1964: 124).

II.a. ***Here is a list of verbs which most often present difficulties, when given in key sentences that are followed by translations into Polish.***

In II.a., II.4. was interpreted as an absolute temporal clause, i.e. a sentence modifier; II.4.a. was disambiguated by means of restrictive relativization, with the potential ambiguity of the nominal (cf. above) removed by adding the plural morpheme. All the same, II.a. was still considered 'awkward' and 'unclear'.

II.b. ***Here is a list of verbs which most often present difficulties; the list is given by means of key sentences with Polish equivalents.***

In II.b., II.4. is interpreted as a reduction of II.4.1., which, in view of the restriction on reduction in a series of relative clauses, is the only possibility. Potential ambiguity of the nominal was resolved by replacing it with a synonymous plural noun. Yet II.b. was also considered 'difficult to make out'.

II.c. ***Here are English verbs which most often present difficulties. They are in key sentences, foll by translations into Polish.***

II.c. was produced by the native informant after the intended meaning of II. has been explained. It was considered grammatically correct, as well as nonambiguous, by all the three informants. Potential ambiguity of II.3. was removed by simplifying the head NP of the first matrix sentence, which is fully justified in view of the context. The non-restrictive modifier on the same NP was represented as a separate sentence, disambiguated in respect of II.4.a.

The above analysis enables us to formulate several reasons that can make a sentence like II. unacceptable. The first of these is potential ambiguity of structures exemplified in II.3., seemingly a very frequent source of ambiguity, cf.,

1. *...the sail of the boat that he left...*

2. *...the variety of language which is superior...*[10],

which also occurs in Polish, cf.,

3. *Żagle okrętów, które zostawil...*

4. *Rodzaj języka, który jest używany...*

Due to the inflexional system, however, this type of ambiguity is less freqent in Polish than in English (nothing but such a tentative hypothesis can be put forward until a systematic contrastive analysis has been completed). Generally recognized as one of the cases of ambiguous reference, the problem is dealt, with in numerous textbooks of written English (cf., e.g. Guth 1965: 35 ff). It cannot be treated as a result of systematic interference, apart from those cases in which an unambiguous structure is rendered into an ambiguous one through direct translation. It is only in the context of other transformations that it can result in a systematic error.

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[10] All examples of English sentences that are quoted below come from students' papers.

Similarly, no contrastive explanation of the ambiguity exemplified in II.4.a. can be offered. The inherent ambiguity of the Polish nominal *tłumaczenie* corresponds to that of its English equivalent. The fact that Polish *tłumaczenie* corresponds to both gerundive and derived nominals in English (i.e. *translating* v. *translation*) has no bearing on the problem of ambiguity, as the restriction on the occurrence of the plural morpheme is the same for the two languages. The reasons for ambiguity, as well as suggestions for stylistic improvement, would therefore be identical in both cases. The 'negative' result of the analysis, however, can prove valuable for a language teacher in one particular respect: reference to pupils' native language can help to explain the nature of the mistake.

Yet it is only through contrasting II. with its Polish counterpart that we arrive as the following two conclusions, which I hope to prove to be crucial for the present discussion:
1. II. is in fact ungrammatical;
2. the ungrammaticality is systematical for the type of structure exemplified in II. and it is due to interference.

In order to prove these statements a Polish sentence will be analysed. Sentence III. below is an attempt at the maximally congruous rendering of II., with full consideration for the original author's intended meaning:

III. *Oto lista czasowników, które najczęściej sprawiają trudności, podanych w angielskich zdaniach wzorcowych wraz z polskimi odpowiednikami*[11].

Though structurally complex and stylistically awkward, III. is considered acceptable and nonambiguous. The surface realization can be reduced to the following sentences:

III.1. *Oto lista czasowników.*

Its derivational history corresponds to that of II.1. (cf. p. 100 above).

III.2. *Czasowniki najczęściej sprawiają trudności.*

III.2. is congruent to II.3. (cf. p. 100 above). It is inserted into the matrix to produce

III.3 *Oto lista czasowników, które najczęściej sprawiają trudności.*

III.3 is nonambiguous in respect of reference of the N[+Wh] form. (For the discussion of potentia lambiguity, both for English and Polish, see p. 102 above.) Still, III. 3. is ambiguous in the sense that the relative clause can be either restrictive or appositive. With a full (non-reduced) clause, this type of ambiguity seems systematic in Polish: the rules of punctuation which require that every two clauses in a series be separated with a comma (cf. Jodłowski, Taszycki 1971: ch. 19) render this distinction impossible in written Polish. The rules of intonation, however, require different patterns for these two types of clauses. Compared with English, the rules of punctuation in Polish seem more arbitrary, i.e., less consequently relying on the deep structure. The two types of clauses are distinguished as, respectively, "przydawkowe" (attributive) and "rozwijające" (developing) in works on Polish syntax (cf., e.g. Klemensiewicz 1963 : 86, 100).

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[11] The ambiguity involved in the Action Nominal has been resolved (cf. II. a., II. b., II. c.) in order to facilitate the following discussion: for our present purposes, this particular instance of ambiguity is found to be irrelevant.

The next constituent,

III.4. ..., *podanych w angielskich zdaniach wzorcowych*...

is also nonambiguous in respect of reference:

III.4.1. **Oto lista*..., *podanych*...

$$\begin{bmatrix} +\mathrm{N} \\ +\mathrm{Sg} \\ +\mathrm{Nomin} \\ \cdot \\ \cdot \end{bmatrix} \begin{bmatrix} +\mathrm{V} \\ +\mathrm{Pl} \\ +\mathrm{Genit} \\ \cdot \\ \cdot \end{bmatrix}, \text{ (cf. II.4.1.)}$$

III.4.2. *Oto lista czasowników, podanych*...

$$\begin{bmatrix} +\mathrm{N} \\ +\mathrm{Pl} \\ +\mathrm{Genit} \\ \cdot \\ \cdot \end{bmatrix} \begin{bmatrix} +\mathrm{V} \\ +\mathrm{Pl} \\ +\mathrm{Genit} \\ \cdot \\ \cdot \end{bmatrix}, \text{ (cf. II.4.2.)}$$

III.4.3. *...*powodują trudności, podanych*...

$$\begin{bmatrix} +\mathrm{N} \\ +\mathrm{Pl} \\ +\mathrm{Acc} \\ \cdot \\ \cdot \end{bmatrix} \begin{bmatrix} +\mathrm{V} \\ +\mathrm{Pl} \\ +\mathrm{Genit} \\ \cdot \\ \cdot \end{bmatrix}, \text{ (cf. II.4.3.)}$$

Moreover, III.4. cannot be interpreted as a sentence modifier (cf. II.5), because of rules of agreement and permutation, cf.

III.4.4. *Oto lista czasowników, które, (gdy czasowniki są) podane*

$$\begin{bmatrix} +\mathrm{N} \\ +\mathrm{Pl} \\ +\mathrm{Nomin} \\ \cdot \\ \cdot \end{bmatrix} \qquad \begin{bmatrix} +\mathrm{N} \\ +\mathrm{Pl} \\ +\mathrm{Nomin} \\ \cdot \\ \cdot \end{bmatrix} \begin{bmatrix} +\mathrm{V} \\ +\mathrm{Pl} \\ +\mathrm{Nomin} \\ \cdot \\ \cdot \end{bmatrix}$$

w angielskich zdaniach wzrocowych, najczęściej powodują trudności.

As a case of a "developing" clause which, semantically, conveys a restriction of relative clauses ("organizuje się przy treści wypowiedzenia nadrzędnego in the second NP of the matrix, i.e., the noun modified by the first of the two jako swoim podmiocie", Klemensiewicz 1963 : 100), the reduced temporal (causative) clause (i.e., "przydawka w funkcji równoważnika zdania podrzędnego", Jodłowski, Taszycki 1971 : 155) must follow immediately the S-dominated noun of the clause in relation to which it is subordinate; the rules of agreement required of surface structure subjects must also be obeyed.

It will be noticed that III.4.2., whose English counterpart was defined as ungrammatical (cf. p. 6 above), is the only plausible interpretation of III.4. An explanation of factors which account for the fact that restriction on reduction in a series of clauses exists in English and does not exist in Polish goes beyond the scope of the present discussion. One of the reasons might be that the participle in Polish retains the features of number, gender, case etc., thus reducing potential ambiguity.

It must be added at this point that the rules of punctuation in Polish do make it possible to distinguish between restrictive and appositive *participial phrases*, which result from the reduction of relative clauses and perform, respectively, the functions of "przydawka wyodrębniająca" (the isolating attribute) and "przydawka dopowiadająca" (the additive attribute), cf. e.g., III.5.1. *Oto lista czasowników podanych w angielskich zdaniach*... against III.5.2. *Oto lista czasowników, podanych w angielskich zdaniach*...

Yet the second of the two commas in III., necessary to separate the first relative clause from the second one, automatically implies accepting III.6.2. as the only possible interpretation. This is confirmed by the requirements imposed by the context, as III.5.1. would suggest that what is given is the list of verbs that had been used in key sentences at some other place. The non-restrictive character of III.4. entails the disambiguation of the relative clause in III.3. in respect of its relation to the matrix. Namely, if both III.4. and the relative clause in III.3. were appositive, then it would be possible to conjoin them by means of *and*[12]:

III.6. *Oto lista czasowników, które najczęściej sprawiają trudności i które są podane w angielskich zdaniach wzorcowych*...

The result is clearly semantically unacceptable in view of the context.

The above analysis leads to the following conclusions:

1. It is not always easy to state whether a sample of linguistic performance that is under consideration is erroneous in respect of style (i.e., is syntactically unacceptable) or grammar (i.e., is ungrammatical). With utterances which are syntactically complex, linguistic analysis on the supra-sentence level might prove necessary.
2. There are cases when a description and/or explanatoin of a given error can be offered only as a result of contrastive analysis, even though some

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[12] For the application of this test to two relative clauses on the same noun which are both appositive or both restrictive, cf. Stockwell et al. (1968 : 448) and Klemensiewicz (1963 : 86).

errors will prove more or less 'universal' and thus render contrastive study inapplicable in any practical sense. For instance, potential ambiguity involved in the usage of Action Nominals is 'universal' in respect of English and Polish. Such a negative result, however, will certainly prove useful when any attempt of classification of pupils' errors is being made: eradication of such errors will require equally 'universal' techniques and so they must constitute a separate category.

The second category will include those errors which are shown to be the direct consequence of mutual interference between the two languages. In such a case, one can legitimately predict their more or less systematic occurrence, as well as put forward hypotheses suggesting remedial procedures.

3. The sample analysis carried out earlier in this paper has shown the error under investigation to be due to interference. Consequently, one is justified in making the following predictions:
   a. Polish learners will tend to disregard the restriction on reduction in a series of relative clauses, since the appropriate rule, valid for English, does not operate in Polish (cf. II.4.2. and III.4.3.);
   b. they will also tend to ignore the fact that reduction of relative clauses increases the likelihood of ambiguity, since the deletion erases from the surface structure such disambiguating factors as, e.g., tense or number, which are retained in corresponding Polish participial phrases (cf. II.4.1., II.4.2., II.4.3. and III.4.1., III.4.2., III.4.6.).

Both a. and b. are actually attested in such examples of students' written performance as:

5. **He found the sail of the boat that he left the previous night, torn by the wind* (Year I student).
6. **He told them a story about a girl who was attacked by the bull, saved by people from the village* (Year I student).

Moreover,

c. because of the lack of strict delimitation between restrictive and appositive clauses in written Polish, learners might not realize that the 'intrusive' comma, inserted into a sentence in order to avoid the type of interpretation exemplified in I.a. above, prevents the second of the two clauses from being restrictive. When it is the restrictive clause that is required for semantic reasons, a change of intended meaning can result, e.g.,

7. *Standard dialect is a variety of language which is superior to other dialects, accepted by the majority of the people* (Year I student; the intended meaning was: ... *that is superior to other dialects and that is accepted by*...).
8. *The Pardoner uses "exempla", stories from various sources, meant to bring the point he is making home to the listeners* (Year IV student; both clauses reduced, the first intended as appositive, the second — as restrictive)

In examples 5, 6. and 7. the commas were inserted by the students only after the necessity was explained to them. Sentences like 8 are usually punctuated correctly, which is due to the instruction that Polish learners are usually given. Following the practice of numerous authors of textbooks of written language, the students are told that appositive clauses are set apart by commas while restrictive ones are not. They are also told that a comma must be placed before a (reduced) clause if the clause modifies any but the last noun in the preceding constituent. Sentences like 1.a. above result from the clash between this latter rule and the rule for the restrictives.

At this point any definite proposition concerning remedial procedures would probably be felt premature. It seems fully justified, however, to put forward the following suggestions:

1. Punctuation rules for relative clauses should be taught, and it seems advisable to replace the prescriptive 'surface' rules presented in traditional text-books with explanations which are in fact based on the deep structure of sentences. One such proposition was made by Owen Thomas (1965 : 175), who suggested that the system of "three levels of definiteness" (which conditions the choice between a restrictive or an appositive) is introduced instead of the traditional opposition between definite and indefinite. He maintains that the awareness of the three levels "will assist in teaching proper punctuation".
2. If an extensive linguistic analysis confirms the hypothesis that results from the discussion presented above, the absence of the restriction on relative clause reduction in a series of clauses in Polish will be shown to be to the system of Polish flexion which makes it possible to retain an adequate number of disambiguating features in reduced participial phrases. It might be shown, consequently, that Polish counterparts of English sentences which are ambiguous and/or unacceptable because of the level of their syntactical complexity can be still judged as acceptable. In view of the above, grammatical and stylistic exercises in written English, meant for Polish learners, should combat rather than encourage the tendency to construct long and complex sentences. That the tendency exists, is frequently confirmed by the teaching practice. Thus exercises of the type "take each of the groups of sentences given below and combine the separate statements into a simple well-constructued sentence", even though doubtlessly beneficial for students, must be applied (and corrected) with a great amount of care.

That many things remain to be done in this respect is clearly proved by the report that the English Institute of Kraków received on a group of its three top students of years III and V, who participated in an intensive course of English in Britain. Their British tutors wrote: "Weaknesses of style were common... syntax was over-complicated and meaning was sometimes obscured by the use of too many dependent clauses... Mr X (year V) was less effective on paper because of a sometimes tortured syntax and an apparent unwillingness to use the obvious construction... Mr Y's (year V) composition was often marred by errors resulting from a too complex sentence-structure... Mr Z's (year III) written English suffers from an over-complex sentence-structure which occasionally results in misplaced clauses". Not enough to generalize, perhaps, but certainly enough to start thinking about possible reasons.

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PHONOLOGY

HOW DO PHONOLOGICAL RULES COMPARE?

EDMUND GUSSMANN

Maria Curie-Skłodowska University, Lublin

The starting point for any contrastive analysis is the existence of linguistic descriptions of the languages to be compared with the obvious proviso that the descriptions must be carried out within the same framework. If the phonological component of a grammar consists of rules that derive phonetic manifestations from underlying phonological representations then the problem facing the contrastive linguist is to determine precisely what it means to say that rules in the two or more languages can be compared, i.e., he must explicate the term "rule comparability". The present paper is an attempt to approach this problem.

It can be assumed without much argument that there exists a universal, restricted class of possible types of rules which include among others rules of palatalisation, glottalisation, assimilation, dissimilation, nasalisation, denasalisation, spirantisation, stress, tone and intonation placement, vowel and consonant deletion, vowel and consonant insertion, etc. Now assume that we find identical or similar rules in two languages and that these rules belong to one of the above-mentioned formal types. How exactly do we go about comparing them? Clearly placing two rules side by side makes no comparison at all, provided that such an operation is in general feasible, as can be seen rather drastically by considering the rules of stress placement in such languages as Polish and English. Much more is needed to render a contrastive study of phonological rules a meaningful enterprise. In what follows we shall try to tackle this question by considering the degemination rule in Polish and English. At first we shall provide evidence justifying such a rule within the phonology of each language independently, and against this background we shall discuss the notion of "rule comparability". The discussion of the rules is based on Gussmann (1973) and Chomsky and Halle (1968) for Polish and English respectively. We pay more attention to the discussion of the Polish phenomena because these have been studied to a much lesser extent than the corresponding problems in English.

Let us analyse the phonological processes involved in the distribution and origin of the adjective-forming suffixes *-ski*, *-cki* in Polish. Consider synchronic the following sets of alternations:

I a. juhas-juhaski, Suez-sueski, Kaukaz-kaukaski, Anglosas-anglosaski, Hindus-hinduski, Prusy-pruski, Francuz-francuski, towarzysz-towarzyski, papież-papieski, mąż-męski
  b. Norweg-norweski, Czech-czeski, Elbląg-elbląski, Nowy Targ-nowotarski, Norymberga-norymberski, bóg-boski, Włoch-włoski, czarnoksiężnik-czarnoksięski
  c. baba-babski, Kaszub-kaszubski, Rzym-rzymski, car-carski, Warszawa-warszawski, Kraków-krakowski
  d. kardynał-kardynalski, trybunał-trybunalski, diabeł-diabelski, anioł-anielski, poseł-poselski, apostoł-apostolski, Mongoł-mongolski, Cygan-cygański, ułan-ułański, pan-pański, błazen-błazeński, Londyn-londyński

IIa. gromada-gromadzki, sąsiad-sąsiedzki, Szwed-szwedzki, lud-ludzki, wojewoda-wojewódzki, Bermudy-bermudzki, inwalida-inwalidzki, gród-grodzki
  b. rybak-rybacki, łajdak-łajdacki, cwaniak-cwaniacki, prostak-prostacki, Kozak-kozacki, pływak-pływacki, Niemiec-niemiecki, heretyk-heretycki, pijak-pijacki
  c. wariat-wariacki, adwokat-adwokacki, literat-literacki, proletariat-proletariacki, pirat-piracki, asystent-asystencki, aliant-aliancki

On the surface it would seem that we are dealing with two suffixes: *-sk-* and *-ck-*. Observe, however, that their distribution is well-defined, if somewhat peculiar, in that *-ck-* appears if it is added to underlying dental stops or the voiceless velar stop[1]. In all other cases we get the suffix *-sk-*. Consequently we can say that we have phonologically only the suffix *-sk-* which is modified in different contexts[2]. However, the conclusion that the adjective-forming suffix is phonologically *-sk-* turns out to be in need of modification if we consider cases where it is added to the underlying liquid /l/ or nasal /n/. These two consonants undergo palatalisation to /l, ń/ and, hence, we postulate the underlying suffix to be *-isk-*; the vowel of the suffix is deleted after palatalising the

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[1] *Malbork-malborski* is exceptional in this respect as is *Egipt-egipski*. This may be due to the consonant preceding the final stop.

[2] We take the suffix to be /sk/ phonologically rather than /ck/ not only because /ck/ is found only after three consonants /t, d, k/ but also because the spirant /s/ appears freely in phonological representations while the affricate /c/ is derived either from underlying /t/ or /k/ in a number of distinct cases. It is possible to argue that /c/ does not appear at all in phonological representations.

preceding segment[3]. Hence, *londyński* and *mongolski* are derived from phonological /londin+isk+/ and /mongoł+isk+/ respectively. In the case of anterior noncoronal consonants we get subsequent depalatalisation by rule

$$(1)\qquad \begin{bmatrix} +\text{anter} \\ -\text{coron} \end{bmatrix} \rightarrow [-\text{high}] \Big/ \;\_\; \begin{Bmatrix} \text{C} \\ \# \end{Bmatrix}$$

This rule, which is quite general in Polish, is responsible for the absence of palatalised labials before consonants and in word final position although labials are quite often followed by front vowels in these positions phonologically. Thus *karp, gołąb* must be represented phonologically as /karpi/, /gołoNbi/ because the final stop is palatalised in other forms, e.g. *karpia, gołębia*.

The surface forms *babski, chamski* are thus derived from underlying /bab+isk+/, /cham+isk+/ by palatalisation, vowel deletion, and depalatalisation. The situation is more complex if we turn to those cases where the suffix is added to underlying coronal continuants (Ia) or the voiced velar stop and velar spirant (Ib). Words like *saski, francuski*, etc., should have the relevant part represented phonologically as /s+isk/, /z+isk/ where palatalisation and subsequent deletion of the vowel produce /ssk/ and /zsk/. In the case of the voiced velar stop or the velar continuant we derive /žsk/ and /šsk/ as in /bog+isk/, /włoch+isk/. The phonetic representation requires rules which would have the following simplifying effects on the consonantal clusters:

śs → s
źs → s
žs → s
šs → s

Stated formally this turns out to be a fairly regular simplification rule:

$$(2)\qquad \begin{bmatrix} -\text{anter} \\ +\text{coron} \\ -\text{sonor} \end{bmatrix} \rightarrow \emptyset \Big/ \;\_\; \begin{bmatrix} +\text{anter} \\ +\text{coron} \\ +\text{strid} \end{bmatrix}$$

The situation is really baffling if we try to construct similar rules for words in group II. The relevant bits in *rybacki, gromadzki, piracki* are phonologically /k+isk/, /d+isk/, /t+isk/. Palatalisation and vowel deletion result in /čsk/, /dźsk/, /ćsk/ and at least one new rule is necessary, viz. one turning /s/ into a non-continuant after a non-continuant:

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[3] The different palatalisation rules as well as the rule of vowel deletion are assumed here without justification. They are discussed in some detail in Gussmann (1973).

$$(3)\qquad \begin{bmatrix} +\text{coron} \\ +\text{strid} \end{bmatrix} \rightarrow [-\text{cont}] \;\Big/\; \begin{bmatrix} -\text{anter} \\ +\text{strid} \\ -\text{cont} \end{bmatrix} \_\_$$

Rule (3) turns /čs, dźs, ćs/ into /cc, dzc, cc/ and if it is ordered before rule (2) no additional cluster simplification will be necessary. There is in Polish a general rule of palatal assimilation which can be presented in a highly simplified form as:

$$(4)\qquad \begin{bmatrix} +\text{obstr} \\ +\text{coron} \end{bmatrix} \rightarrow \begin{bmatrix} \alpha\,\text{anter} \\ \beta\,\text{distrib} \end{bmatrix} \Big/ \_\_ \begin{bmatrix} \alpha\,\text{anter} \\ \beta\,\text{distrib} \end{bmatrix}$$

This rule is necessary to account for the alternation of the palatal quality of the first spirant in words like *most-moście*, *pasta-paście*, *poszczę-pościsz*, *puszczę-puścisz*, etc. If we allow rule (4) to apply before rule (2) but after (3) we will derive sequences of identical consonants, i.e. rules ([illegible]) and (4) (followed by voice assimilation which we disregard here) will have the following effect on the clusters under discussion:

śs → ss
źs → ss
żs → ss
šs → ss
čc → cc
dżc → cc
ćc → cc

We thus obtain a sequence of two identical consonants. The phonetic representation can be achieved by positing a rule deleting one of two identical consonants, i.e.

$$(5)\qquad \begin{bmatrix} +\text{conson} \\ -\text{nasal} \\ \alpha\,F \end{bmatrix} \rightarrow 0 \;\Big/\; \_\_ \begin{bmatrix} +\text{conson} \\ -\text{nasal} \\ \alpha\,F \end{bmatrix}^{4}$$

where F stands for "features".

The correct order of rules is now: 3, 4, 5. Rule (2) can be dispensed with. (The last rule is inadequate in any case as it would incorrectly simplify

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[4] We have no evidence to indicate whether it is the first or the second of the two identical consonants that is deleted. We do not even know whether this problem is at all relevant.

the clusters in *moście*, *poście*, etc.). Degemination rule (5) must contain the specification (—nasal) as sequences of nasals (i.e. long nasals) are possible in Polish, e.g. *panna*, *wanna*, *ranny*, *gamma*, etc.[5]

It should be noted that the assimilations and simplifications discussed above are not restricted to the suffix *-isk-* only; the same is true, for example, in the case of the suffix *-istv-*. On the basis of our considerations so far we could predict that underlying /d, k, t/ in contact with the suffix *-istv-* will result in *-ctv-* while all other consonants will result in *-stv-*. This is indeed the case as the following sets of words clearly document:

III. pijactwo, ptactwo, próżniactwo, awanturnictwo, maniactwo, żebractwo, kozactwo, robactwo
wariactwo, bractwo, opactwo, piractwo, natręctwo, szlachectwo, bogactwo, sieroctwo
władztwo, sąsiedztwo, śledztwo, inwalidztwo, krótkowidztwo, samorództwo, województwo

IV. czarnoksięstwo, męstwo, papiestwo, obywatelstwo, sowizdrzalstwo, warcholstwo, chuligaństwo, błazeństwo, posłuszeństwo, ubóstwo, niedołęstwo, żelastwo, bóstwo

The regularities discussed above can be illustrated by the derivation of *bóstwo*, *ptactwo*, *sąsiedztwo*:

underlying:	bog+istv+o	ptak+istv+o	soNsed+istv+o
palatalisation	bož+istv+o	ptač+istv+o	soNśedź+istv+o
i-drop	bož+stv+o	ptač+stv+o	soNśedź+stv+o
rule 3		ptac+ctv+o	soNśedź+ctv+o
rule 4	boz+stv+o	ptac+ctv+o	soNśedz+ctv+o
voice assimil.	bos+stv+o		soNśec+ctv+o
rule 5	bos+tv+o	ptac+tv+o	soNśec+tv+o
other rules	bustfo	ptactfo	sow̃śectfo

One interesting observation emerges from the discussion of the deletions. Velars before the suffix *-isk-/-istv-* seem to fall into two groups, one comprising the velar spirant and the voiced velar stop and the other consisting of the voiceless velar plosive only where the former results in *-sk-/-stf-* and the latter in *-ck-/-ctf-* (cf. sets Ib and IIb above). Thus, on the surface, it would seem that the velars form an unnatural class with respect to the suffixes, i.e., one would expect all of them behave in the same way by virtue of being velars, or at least one would want to group /k/ and /g/ together by virtue of

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[5] There are a few exceptions to the degemination rule: *lekki* and its derivatives, *dżdżu*, *dżdżownica*. We also omit from consideration cases like *rozsadzić*, *poddać*, *zszyć*, etc., where a word boundary must be inserted after the prefix.

being velar stops. What we find, however, is the voiceless velar spirant and the voiced velar stop classed together with dental continuants as against the voiceless velar stop classed together with dental stops. Deeper scrutiny reveals, however, that the distribution is prefectly regular and can be predicted in advance. Observe that at the phonological level the suffix is -isk-(or -istv-) regardless of what precedes it so that no problem of the natural class arises here. Now, at the stage where the relevant assimilations and deletions apply the underlying /g/ is no longer a stop, or even an affricate, but a spirant due to the specificity of velar palatalisations in Polish. One of the velar palatalisation rules turns the underlying voiced velar stop, into the affricate /dž/ which further undergoes spirantisation to /ž/ unless it is preceded by a continuant. Thus we get numerous alternations like *bóg-bożek*, *droga-dróżka*, *krąg-krążę* where the palatal spirant is derived from an underlying velar through palatalisation and spirantisation and a few forms like *mózg-móżdżek*, *drobiazg-drobiażdżek*, *rózga-różdżka*, where the underlying velar stop results in a palatoalveolar affricate because it is preceded by a spirant. Thus /g/ in words like *bóstwo*, *norweski* is a continuant at the relevant stage in the derivation and consequently it belongs together with underlying continuants /s, z, ch/ forming a natural class with respect to the rules, as against /k, t, d/ which at no stage in the derivation are continuants. The existence of similar phenomena provides empirical justification for the reality of intermediate stages between the phonological and phonetic representations. What this argument shows for our immediate purpose is that the degemination rule is placed quite late in the series of ordered rules, at least after the major palatalisation and assimilation rules have been applied. It is also for this reason that forms like *paryski*, *towarzyski*, *męski* are here treated on a par with those that end in a spirant in the environment of the rules of assimilation and simplification, although we have no evidence as to their phonological status, i.e., *Paryż* might be derived from a phonological representation with a final /g/ or /z/ followed by the front /j/-glide; it certainly could not be derived from an underlying /rj/ because then the adjective would be **paryrski*. For the purpose of the degemination rule we do not have to make up our mind as to whether *Paryż* should be represented phonologically with a /gj/ or /zj/ cluster — what is relevant is that at the stage in the derivation where the rules apply, the final segment must be a spirant.

The evidence that we have adduced appears to justify the existence of the degemination rule (5) in Polish. The rule makes it possible to derive in a general way a number of words which would otherwise have to be treated as largely irregular. It furthermore finds some additional support in the phonological behaviour of the voiced velar stop.

The function of geminates within the phonology of English has been studied in detail by Chomsky and Halle (1968 : 46 - 8, 83, 148 - 9, 221 - 2) and we shall briefly review some of their arguments. These can be divided into three groups which are connected with the rules of stress placement, vowel tensing and s-voicing.

Considerations of stress placement force us to posit double consonants in words like *caress, harass, remiss*. The final stress in these words can be readily understood if the final consonants are treated as geminates. These create strong clusters and thus make the strings conform to general patterns of English stress-palcement. The word *harass* is particularly interesting as it allows for a variant with penultimate stress. The simplest solution is to assume that the phonological representation of the word contains a single consonant in some idiolects and, thus, the penultimate stress is induced. Chomsky and Halle (1968: 83) cite interesting examples of stress placement in some adjectives and nouns, e.g.: *cerebellar, morbillous, medullar, vanilla, umbrella* as against *cephalous, perilous, scurrilous, buffalo, metropolis*. The phonetically single (short) /l/ in the former group of words behaves phonologically as if it were a consonantal cluster which prevents the placement of antipenultimate stress while the short /l/ in the latter group has no such effects. For this reason words like *umbrella* are represented phonologically with geminate /ll/ and the stress is assigned in accordance with general principles. A later rule simplifies all geminate sequences of consonants. The same is true not only for the liquid /l/ but also for other consonants as the following examples indicate: *confetti, Mississippi, Kentucky, Philippa*, etc.

Another instance of geminate consonants can be seen in conjunction with rules of vowel tensing and concomitant vocalic alternations. Among the rules there is one which tenses underlying lax vowels if a weak cluster follows producing ultimately phonetic diphthongs as in *futile, mural, punitive, music, gymnasium, magnesium, cesium, cupola, cutaneous*, etc. In a number of cases, however, no tensing seems to occur and the underlying vowel is not subject to the diphthongisation rule as in *cunning, currency, mussel, russet, bucket, putty, Kentucky*. To account for the failure of the tensing rule to apply we postulate underlying geminate consonants. In the case of words like *Kentucky, confetti*, this solution is further confirmed by considerations of stress placement as discussed above.

Effects of the tensing rule can also be observed in conjunction with the s-voicing rule, i.e., there seems to be a general regularity in English to the effect that the intervocalic /s/ gets voiced if the preceding vowel is tense[6], e.g. *Susan, music, Moses, Pusey, rosary, miser, gymnasium*. No voicing occurs if /s/ is preceded by a lax vowel as in *mussel, Rossall, gossamer, gossip, lesson*. Thus s-voicing and vowel tensing ultimately depend upon the presence or absence of underlying double consonants.

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[6] Clear exceptions include: *basic, isolate, Mason, basin, masonery*.

So far we have mentioned cases of geminates which have their source in phonological representations. Chomsky and Halle (1968 : 221-3) argue, however, that geminates arise in intermediate representations due to the operation of earlier rules. Discussing the prefixes *ab-* (e.g. ***abduct, absorb, abrupt***), *ad-* (e.g. *adhere, admire, admit*), and *sub-* (e.g. ***subdue, subscribe, subtract***) they observe that the final consonant of the prefix has a different value for the feature [coronal] than the initial consonant of the stem. Furthermore, there are phonetically no prefix-final and stem-initial consonantal clusters agreeing in coronality[7]. This suggests that the latter situation to arise phonologically, the two consonants would have to be completely assimilated and subsequently degeminated. This explanation is offered for the following sets of examples:

prefix **ab-** : *appal, appeal, appear, appease, apply, appoint, appraise, apprehend*
prefix **ad-** : *assume, assist, assign, attest, attend, attempt, attain, adduce, accede, accuse, accept, accelerate, accomplish, accord, accrue, account, aggrieve, agglutinate*
prefix **sub-** : *suffice, suffuse, supply, support, supplant, suppose, suppress succeed, success, succumb, succinct, suggest*

This solution while affording a neat explanation for disparate facts requires that the rule assimilating consonants which agree in coronality be placed before the degemination rule while the degemination rule itself be placed after rules of velar softening and spirantisation. The degemination rule must precede the rule of palatalisation as shown by words like ***Russian, Prussian*** for otherwise the incorrect cluster /sš/ would be derived. All these bits of evidence taken from different parts of English phonology provide sufficient justification for a rule of degemination which might be formulated in a similar manner to the Polish rule:

$$\begin{bmatrix}+\text{conson}\\ \alpha\text{F}\end{bmatrix} \rightarrow \emptyset \;\Big/\; \underline{\quad}\begin{bmatrix}+\text{conson}\\ \alpha\text{F}\end{bmatrix} \qquad (6)$$

Having established the existence of a degemination rule in both Polish and English[8], we now turn to the basic question of this paper — in what sense can these two rules be said to be comparable? The existing literature on contrastive generative phonology is very scanty and Di Pietro's (1972 : 135-58) treatment is probably the most extensive one.

His discussion, although very much needed, is far from satisfactory as it does not go beyond elementary statements. Di Pietro concentrates on what he calls phonological redundancy rules (the earlier term was "morpheme structure rules") and he also takes up the problem of phonological characterisation rules. These are apparently meant to correspond to Chomsky and Halle's phonological rules as indicated by the examples cited to illustrate them (pluralisation in English and Spanish, partial nasal assimilation in a dialect of Spanish). Di Pietro's treatment suffers from two basic failings: its depth and scope are extremely limited and the problems actually discussed are quite elementary or even trivial. Furthermore, and this we would take to be the fundamental failing, his treatment is hardly contrastive at all for, as we noted at the outset, placing two rules side by side does not make a contrastive study, as two completely identical rules may be so differently interrelated with other rules in the two languages that the formal or structural similarity vanishes into thin air. This is indeed the case with our degemination rules. On the face of it they look quite similar, the only difference being that the Polish rule requires the exclusion of nasals from the domain of the rule. This purely formal comparison not only fails to bring out any specific properties of the rules but it in fact goes a long way to obscure the whole issue, for the two rules are drastically different in spite of their superficial similarity. In order to see this we must consider the scope of rule applicability.

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[7] Possible exceptions: *submit, submerge, subvert, adsorb.*

[8] The following discussion does not depend crucially on the correctness of every detail of the analyses presented above for we are interested in the general issue of rule comparability rather than in details of the two degemination rules.

The first point we would like to raise is the occurrence of geminates in underlying representations. In English, word internal double consonants are quite common phonologically, while in Polish basically only nasals can occur there. This means that the English degemination rule applies at least partly to sequences of consonants provided by the input representations and, hence, the sequences are largely unpredictable, while in Polish degemination applies to outputs of earlier rules and this fact considerably limits its generality. Our analysis provides evidence for the statement that in English the majority, if not all, consonants can appear as geminates phonologically and, hence, they undergo the rule in question; while in Polish it is basically only the strident obstruents which satisfy the structual description of the rule. This difference in the scope of applicability finds no formal reflection in the rule itself because the theory of phonology requires that the rules be constructed in the simplest possible way. To take an example, the degemination rule in Polish need not specifically exclude /dd/ or /bb/ clusters from its domain simply because at the time when the rule applies no such sequences will be available for the rule to effect. This means that from the point of view of Polish phonology alone, the degemination rule can be formulated in the most general terms. The addition of the specification /+strident/ would pointlessly complicate the rule. For contrastive purposes, however, the simplest formulation of the rule may be a hindrance in appreciating the scope of its applicability. The generality of the rule can be affectedly compared if, in addition to the structural description of the rule itself, the relevant aspects of phonological representations are taken into account.

It was shown above that the degemination rule in Polish applies to sequences produced by earlier rules of assimilation and that some simplifications in English affect clusters derived through the operation of complete assimilation (e.g. *assume*, *attest*) or velar softening and spirantisation (e.g. *excite*, *exceed*). This brings the next major questions which any contrastive phonological analysis must face, viz. the interaction of the rule we compare with other rules and the depth at which our rule is ordered.

It goes without saying that although all rules are equal, some are more equal than others. The relative importance of a rule can be stated only in impressionistic terms, which, however, does not detract from the reality of the problem. Thus a rule which tenses all vowels before a CV sequence is more important than a rule tensing only front vowels before a CVCCV sequence because the latter is less general than the former. Likewise, a rule placed early in the ordering is more important than one found towards the end of the phonology if only because the former will feed or bleed (to use Kiparsky's (1968) terminology) a larger number of successive rules than the latter.

Taking these factors into account, we note that the English degemination rule is fed by rules of complete assimilation, velar softening and spirantisation. Of these at least velar softening and spirantisation are crucial rules in English; and, furthermore, complete assimilation and velar softening are towards the very beginning of the phonology. The degemination rule itself bleeds the rule of palatalisation (e.g. *Russian*), i.e., one, which is also of paramount importance in English. The Polish degemination is fed by two rules of assimilation of which only one, i.e. rule (4) assimilating the palatal quality of adjacent consonants, is of cross-lexical generality. What is more important is the fact that the Polish rule is ordered quite late, in particular after all the major phonological processes including palatalisations and assimilations. This fact itself assigns a clearly secondary status to the rule within Polish phonology.

We have considered a rule which is very simple formally and remarkably similar structurally in both Polish and English in order to make the dangers involved in the simple-minded rule comparison all the more conspicuous. It is all too easy to pick two rules, say of palatalisation, where in one language all consonants are palatalised before any front vowel and in the other only dental stops are palatalised before /i/ and claim, by comparing their structural descriptions, that they are very different or very similar, whatever the case may be. We are far from rejecting the importance of formal comparison; in fact some degree of formal similarity is a prerequisite to any comparison. But the recognition of formal similarity is only the very first step which, if taken in isolation, may be completely misleading. In this paper we have tried to show that in order for contrastive phonological analysis to yield meaningful results, the following factors, apart from formal rule comparison, must be taken into account:

1) the scanning of strings meeting the structural description of the rule with phonological representations, i.e., is the rule exclusively fed by other rules or do phonological representations themselves require the rule?
2) interaction with other rules of the phonology, i.e., what rules feed or bleed it? what rules does it feed or bleed?
3) depth of ordering, i.e., is the rule placed relatively early or relatively late?
3) depth of ordering, i.e., is the rule relatively early or relatively late within the phonology?

Rule comparability as presented above calls for one more comment. The notions of feeding and bleeding order which we find fundamental for contrastive phonological purposes have been modified here in comparison to Kiparsky's original proposal. For Kiparsky feeding and bleeding relations obtain rules directly adjacent in the linear sequence. Comparing the English rules discussed above and their relative ordering established by Chomsky and Halle (1968: 38 - 45) it is easy to notice that the way we approach rule interaction comes very close to Anderson's concept of pairwise orderings as developed in a number of recent publications (Anderson 1970, 1972, 1974). This suggests that the degree of significance achieved by contrastive phonology may fundamentally depend upon the choice of the "best theory" to underlie the compared descriptions.

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LOW PHONETIC VOICE ASSIMILATION WITH OBSTRUENTS IN POLISH AND ENGLISH

Jerzy Rubach

University of Warsaw

Obstruents are different from sonorants in that they are produced "with a cavity configuration that makes spontaneous voicing impossible" (Chomsky and Halle 1968: 302). The mere fact that voicing or unvoicing of obstruents must be determinate suggests the importance of the feature [voice] for distinctions among obstruents. In some contexts, however, these distinctions may be obliterated completely (as in Polish) or partially (as in English). This obliteration is caused by different assimilation processes referring to voicing and unvoicing. In this paper an attempt will be made to analyze such processes in Polish and English. We shall be primarily, though not exclusively, concerned with low phonetic rules and since such rules may be at least partly accent-specific it is important to note that we shall be considering Warszawska Polszczyzna Kulturalna for Polish and Received Pronunciation for English. No attempt is made to account for alternations such as, for example, /d/ — /s/ in *offend — offence*, /d/ — /š/ in *pretend — pretension* (and probably /b/ — /p/ in *transcribe — transcription*) as these are clearly not conditioned by low phonetic contexts[1] and consequently not by low phonetic rules of voice assimilation.

It seems best from the organizational point of view to discuss the process of voice assimilation first in a progressive aspect (an adjustment to the seg-

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[1] In this paper we accept the view that, e.g., the alternant of /b/ in *babka* is an output of a low phonetic rule active in the context of a phonetic voiceless segment, similarly the [śp] in *gróźb* is conditioned by a low phonetic context, cf., *gróźb złowieszczych* [-źb # z-].

ment which precedes) and then in a regressive one (an adjustment to the segment which follows) Further on, in each type statements must be made about voicing and unvoicing of segments.

Progressive assimilation

Progressive assimilation in Polish and English involves only unvoicing of segments. In the traditional approach to Polish phonology (cf., for instance, Wierzchowska 1971 : 203-4) the progressive assimilation of unvoicing is invariably considered (at least for WPK[2]) to be a historical process nonproductive synchronically for modern Polish. This view is clearly untenable within the framework of generative phonology accepted in this paper. In our opinion the progressive assimilation of unvoicing is productive. There are basically there arguments in support of this interpretation:

a) the often mentioned fact (cf. Wierzchowska 1971: 204) that in the South-West accent of Polish this assimilation may not occur, i.e., forms like [kv'at] or [kv'jat] are permissible[3].

Within the generative framework where an attempt is made at giving generalizations and phonological and phonetic rules account for language specific or as in this case accent specific diversification of phonetic forms the above quoted data may point to the fact that *kwiat* should be entered with an underlying /v/ in the lexicon; this is the least convincing argument as there might be cases of dialectal differences reflected directly in the underlying representations.

b) stylistic alternations in both Polish accents in cases such as *trwać* where the prevocalic obstruent can be voiced or voiceless;

c) finally the most powerful argument: nonstylistic obligatory voicing of the phonetic [f] of *marchwi*, *rzodkwi*, *modlitwa* in *marchewek*, *rzodkiewek*, *modlitewnik*.

At first glance it may seem that these alternations can be explained by a voicing rule having the shape[4]:

$$(1) \qquad [+\text{obstr}] \rightarrow [+\text{voice}] / [+\text{voice}] — [+\text{voice}]$$

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[2] WPK hereafter will denote "Warszawska Polszczyzna Kulturalna".

[3] It is also often attested in WPK but only in songs as the singers make deliberate attempts to avoid voiceless segments (e.g. Bogdana Zagórska, Wielka gra. 6.05.1973. TVP).

[4] Kiparsky's alternation condition as the *only* premise for setting up underlying representations has been generally rejected, cf. Hyman (1970), for recent discussion Gussmann (forthcoming) and for a controversy over the indeterminancy of phonological representations cf. K. E. Zimmer (1969), J. L. Malone (1970), Th. Lightner (1971 : 521 - - 54).

The rule is easily proved to be false since in, e.g. *chatek*, *matnia* we have the phonetic [t] not [d]. Consequently, *modlitwa* and the like should be rather viewed as having the underlying /v/ which is unvoiced by the assimilation rule (2):

(2) $$[+\text{obstr}] \rightarrow [-\text{voice}] \,/\, [-\text{voice}]\text{—}$$

The above mentioned alternation seems to provide enough evidence to postulate underlying voiced obstruents also in words such as *tworzyć*, *twarz*, *krzak*, etc., although for these specific instances no alternants have been discovered. Furthermore, let us notice that in *trwać*, *krwi*, *plwać* the prevocalic obstruent is usually (though not always) realized as voiceless. This would suggest a necessary extension of rule (2) to apply also over phonologically voiced segments. As is immediately clear these segments are liquids. Thus rule (2) in its extended version takes the following shape:

(3) $$\begin{bmatrix}+\text{obstr}\\ +\text{contin}\end{bmatrix} \rightarrow [-\text{voice}] / [-\text{voice}] \left(\begin{bmatrix}+\text{voc}\\ \\ +\text{cons}\end{bmatrix}\right)\text{—}$$

In accordance with Harms's abbreviatory devices (1968: ch.7) the rule is expanded first in its fuller form (i.e. with the liquids) and thus applies to *krwi*, *plwać* and then in its shorter version applying to *twarz*, *kwiat*, *modlitwy*, *krzak*, etc. As mentioned above the prevocalic obstruent separated from the voiceless segment by a liquid (i.e., the environment of (3) in its expanded version) may be voiceless (i.e., when rule (3) applies) or voiced. It is voiced only in careful guarded speech (speeches made in public, texts read by radio-speakers). Thus (3) in its expanded version is an optional rule. Its application or non-application produces variant pronunciations comparable to those found in English in reference to the place or manner of articulation, the difference being that English variant pronunciations are a result of an intricate interplay of phonological rules while with Polish voiced — voiceless variants, as in *krwi*, the rules are clearly low phonetic.

In fact in English in the voiceless environment obstruents are invariably devoiced usually partially or with some speakers fully. If a voiced obstruent appears after a pause or a voiceless segment then it is devoiced in the part adjacent to the voiceless context. Thus in *bow*, *this bow*, *crossbow* [b] is devoiced in the first half (Jassem 1971: 189 ff).

The process can be described by rule (4) (to be collapsed with another rule, cf. below):

(4) $$[+\text{obstr}] \rightarrow [-\text{voice}] \Big/ \begin{Bmatrix}\#\ \#\\ [-\text{voice}]\,(\#)\end{Bmatrix}\text{—}$$

Two points need explaining in this rule:

- the abbreviatory device of dotted bracketing denotes that the rule applies to parts of segments and furthermore to that part of the segment which is adjacent to the conditioning environment. A need for such as abbreviatory device and convention has been found on independent grounds (cf. Rubach 1975).

This solution is favoured over Halle's proposal quoted by Postal (1968 : 78) where half-devoiced segments are denoted by the feature complex [+tense, +voice]. It seems that the devoicing of obstruents is not due to the introduction of articulatory tension but rather to the assimilation to [−voice] segments. Thus the half devoiced obstruent remains [−tense] unlike as in the above analysed Polish examples where the *fully* unvoiced obstruent could be equated with other voiceless obstruents (the phonetic [f] in *twarz* is not different from the [f] in *firanka*).

- (4) is regarded as an assimilation rule. The difficulty arises with pauses as conditioning elements. It is hard to think of an assimilation of a segment to something which is not a segment such as pauses in our case. However, the rule can be maintained if we agree to regard pauses as functionally voiceless obstruents[5], which points to a certain generalization.

From the phonetic material which we have examined it seems that this generalization is specific to English and its usefulness is limited as it is not only language specific but also restricted to the progressive type of assimilation. Let us regard it, however, as a first approximation and see whether it could not be extended to other cases.

Regressive assimilation of voicing

In English the situation is straightforward. In Received Pronunciation the regressive assimilation of voicing does not occur[6]. Polish seems somewhat complex in this respect. Apart from the obvious differences between the WPK and the South-West accent there are a few allegedly troublesome points. Consider the following words:

A. *liczba, także, prosba, Bohdan, ruszże, kupże, tak było, brat wiedział, prosić go*

B. a) *fakt że, kask dobry, fuks wyjątkowy, szewc zapracowany*

b) *punkt dziewiętnasta, instynkt zachowawczy, państw budujących*

c) *tekst był, wydawnictw dawnych*

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[5] This is essentially a modification of Lass's idea (1971 : 26 - 7) that for German word boundaries should be treated functionally as voiceless obstruents.

[6] It is not true for other English accents. In Scottish English such assimilations appear to be regular. Abercrombie (1965 : 136) quotes *blackboard, birthday* as having [g] and [ð] respectively under the influence of the following voiced obstruent.

d) ***przestępstw wojennych, ludoznawstw dawnych***

C. ***zaniósłby, zgniótłby, podniósł wagę, włókł go.***

The phonologically voiceless obstruents in the words of **A** and **B**[7] appear in a voicing context, i.e., before other voiced obstruents. Consequently, they should be voiced in accordance with the well known rule of Polish phonology that sequences of obstruents are either fully voiced or fully voiceless. In normal speech it is in fact the case with all the examples quoted in **A** and **B**.a. Voicing of obstruent clusters in **B**.b, c, d is less obvious. One important reservation has to be made before we proceed: we are considering a style of Polish where no rapid speech deletions have taken place. Otherwise the whole argument would be pointless as consonant clusters may often have a reduced number of members. Thus in ***tekst był*** the /t/ is often elided and then the situation is that of B.a. In ***państw budujących*** two final obstruents may be deleted and in ***przestępstw wojennych*** even three. Consequently, the words become parallel to those in **A** and by a regular process a single voiceless obstruent is voiced in the favourable environment: hence the pronunciations such as [pajzt bud-], [pšestemzt vo-].

Jassem and Łobacz (1972: 11) quote ***tekst był*** as an exception "running contrary to the rules of Polish phonotactics" since they have noted the pronunciation [-kst ≠ b-] where the sequence of obstruents is not uniform in voice. In our opinion this should not be regarded as exceptional but rather as an example of regular stylistic variations. If we compare the words in B.b and B.d we notice that the probability of voicing of final obstruent clusters decreases quite rapidly. As a matter of fact those in B.d are (according to my observations) more often voiceless than voiced.

The regularity underlying these variations seems straightforward: ***the more members in an obstruent cluster, the less obligatory is the voicing assimilation rule.***

In other words, if we analyse careful and guarded speech, in **A** all obstruents will be invariably voiced, the same in B.a (voiceless pronunciations can noted only in overcareful unnatural speech). in B.b, B.c the probability of voiceless clusters increases, in B.d obstruent clusters are normally voiceless in this style of speech, i.e., the voicing rule does not apply in spite of the following voiced context. Now let us consider the words in C. ***Zaniósłby*** has three possible pronunciations: [sw ≠ b], [zw ≠ b], [z ≠ b]. The last pronunciation may be disregarded here as after the deletion of [w], ***zaniósłby*** falls together with the examples in **A** and the voicing is obligatory by a regular process. The first two pronunciations prove that the rule of voicing assimilation does not obli-

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[7] In some examples of B there are clusters of voiceless obstruents with the phonologically voiced /v/. It may be safely accepted, however, that at this stage the phonological /v/ is represented by the phonetic [f] due to unvoicing assimilations. This view stems from the fact that rules first apply to words and only then to phrases.

gatorily apply if the voiceless obstruent is separated from the voicing context by [w]. As [w] is phonologically a liquid (we are referring to the underlying representation here as this will have to be done anyway in rule (2) and then the similarity of environments of (5) and (3) will be more evident; for the justification of [w] as derived from an underlying liquid cf. Gussmann (forthcoming)) the intervening segment should be described by the features $\begin{bmatrix}+\text{vocal}\\+\text{conson}\end{bmatrix}$. Fruthermore, notice that the stylistic variant with a voiced obstruent in such situations is dependent on the presence of the voicing context (recall that in *trwać* this was not the case) which in the examples given in C is a voiced obstruent appearing after a word boundary (*zaniósłby* has a word boundary; for discussion see below).

We can sum up our discussion in a formal rule like (5):

$$(5)\qquad [+\text{obstr}] \rightarrow [+\text{voice}] \Big/ \_\!\_ \left(\begin{bmatrix}+\text{vocal}\\+\text{conson}\end{bmatrix}\right)(\#)\begin{bmatrix}+\text{obstr}\\+\text{voice}\end{bmatrix}$$

Note that the obstruent specification in the environment is necessary here since, for example, in *zaniósł róże* the phonetic [zw] is not possible.

Rules (5) and (3) are clearly ordered. Rule (3) must precede (5) so as to cause the unvoicing of /v/ in *marchwi*, etc. If (5) preceded (3) then we would get incorrect outputs (in our example /x/ would be voiced).

Regressive assimilation of unvoicing

As before, English presents no difficulty here. Voiced obstruents are partially devoiced (with some speakers fully, cf. Gimson 1966: 147) before a pause or a voiceless segment, e.g. *Bob, bed, bag, leave, bathe, rose, rouge, absolute, adsorb, Bob to, bed for*.
The appropriate rule is:

$$(6)\qquad [+\text{obstr}] \rightarrow [-\text{voice}] \Big/ \_\!\_ \begin{Bmatrix}\#\ \#\\(\#)\,[-\text{voice}]\end{Bmatrix}$$

The rule is similar to (4) both in its shape and interpretation; even more (6) is a mirror image of (4) hence the collapsing of the two rules is called for. This can be done using Bach's "neighbourhood convention":

$$(7)\qquad [+\text{obstr}] \rightarrow [-\text{voice}] \Big/\!\Big/ \begin{Bmatrix}\#\ \#\\(\#)\,[-\text{voice}]\,(\#)\end{Bmatrix}$$

There is still one case to be examined for English. If a voiced obstruent occurs between a phonologically voiced obstruent and a pause or a voiceless segment then it is fully unvoiced (cf. Jassem 1971 : 211), e.g. *robs, beds, bags, robs for, bags from*[8], etc.

This fully unvoiced obstruent is not, however, phonetically identical with [s] as in *see*. The difference lies primarily in the force of articulation: [z] is [−tense] and [s] is [+tense], which must be marked in the rule:

$$(8) \qquad \begin{bmatrix} +\text{obstr} \\ -\text{tense} \end{bmatrix} \rightarrow [-\text{voice}] \Big/ \begin{bmatrix} +\text{obstr} \\ +\text{voice} \end{bmatrix} \text{—} \begin{Bmatrix} \# \ \ \# \\ \# \ [-\text{voice}] \end{Bmatrix}$$

It seems to be a good point of departure to discuss briefly the feature [tense] in low phonetic considerations of consonants. First of all the feature is used in basically two senses: force of articulation (e.g. Gimson 1966 : 32) and length (e.g. Hoard 1971: 134) or both at the same time (e.g. Chomsky and Halle 1968 : 324).

The last approach is most appealing as clearly apart from the greater muscular effort length should also be considered. This explains, for instance, why the vowel in *bit* is shorter than in *bid* ([t] is long so the vowel is short, [d] is short so the vowel is long). There has been a long lasting controversy in linguistics about the role of the features [voice] and [tense] in phonetic differentiation of sounds. Some linguists claimed that [tense] was the distinctive feature e.g. in English, others were inclined to ascribe this role to [voice]. The discussion is summed up in Kim's article (1965: 339 ff.) and there is no need to repeat it here. We might only add Hultzén (1962 : 310) to the list of the adherents of the [tense] feature as distinctive (in this case for English. It seems best to accept the view that at least for English and Polish [voice] and [tense] are concomitant features. For phonological and the majority of phonetic analyses [voice] provides sufficient distinction. It is only very rarely that these two features are seperated (cf. rule (8)[9] and some Polish examples below, then [−tense] appears in the left side specification). In other cases in this paper whenever we state that an obstruent has been unvoiced (the whole segment, i.e. solid line in our notation) we always understand that the change from [+tense] to [−tense] has also taken place. Kim (1965 : 457) rightly stresses that [tense] is a relative feature. Consequently, it may be different in absolute values in different languages. This seems to be the case with English and Polish. It appears correct to suggest that for Polish its

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[8] It seems that the phonological representation of the plural morpheme (also of other morphemes having this shape as the 3rd person singular of the present tense) is /ız/.

[9] Harris (1969 : 41) does for Spanish what we have done for English, i.e., he represents a phonologically voiced obstruent which is phonetically fully unvoiced by the feature specification $\begin{bmatrix} +\text{voice} \\ -\text{tense} \end{bmatrix}$.

absolute values are much lower than for English. It explains why for Slavic languages [voice] is more important for phonetic identification of segments[10].

Coming back to the main issues taken up in this paper let us observe that the "pause" generalization we formulated earlier in a first approximation can be extended further, viz. rule (6). Thus the generalization should read as follows: in unvoicing assimilations in English pauses function as voiceless obstruents. Notice that (7) and (8) form an ordered set where (8) precedes (7), cf. a low phonetic derivation for *beds*:

$$\begin{array}{llll} & bedz & & \\ \text{rule 8} & b\,e\,d\,\underset{\circ}{z} & \text{where "o" means} & \begin{bmatrix}-\text{voice}\\ -\text{tense}\end{bmatrix} \\ \text{rule 7} & \underset{\circ-}{b}\,e\,\underset{-\circ}{d}\,\underset{\circ}{z} & & \end{array}$$

Regressive assimilations of unvoicing are much more complex in Polish. Consider the following words:

A. *chleb, ród, Bóg, mów, bez, jeż, weź, chodź;*

B. *chleb ten, ród książęcy, Bóg chrześcijański, mów ciszej, bez kwitnący, jeż klujący, weź sobie, chodź tutaj;*

C. *chleb razowy, ród osławiony, Bóg łaskawy, mów lepiej, bez różnoraki, jeż o ostrych ..., weź jej, chodź raczej wolniej;*

D. *róbmy, weźmy, postawmy, chodźmy, leżmy;*

E. *babka, budka, rowka, żelazko, brzeżka, buźka.*

As is immediately clear all the phonologically voiced obstruents (cf. *chleb-chleba, mów-mówi, babka-babek,* etc.) are represented phonetically by their voiceless counterparts.

The underlying process is regressive assimilation of unvoicing. Let us examine the environment in which it takes place:

A — before a pause
B — before a voiceless obstruent across word boundaries
E — before a voiceless obstruent within words
C, D — before a sonorant across word boundaries.

The collapsing of C and D may at first glance seem dubious. Superficially one may tend to regard *róbmy* as having a morpheme boundary. It will prove to be false when we compare it with *biedny* which clearly has such boundary after the second obstruent (*bieda — biedny, obrona — obronny*). With morpheme boundaries the unvoicing assimilation rule does not apply: *biedny* has a phonetic [d] though it may be auditorily slightly obliterated as the realization variant has usually a nasal plosion here (but, cf. *chleba+a, bieg+li*). Consequently, *róbmy* should be analysed as having a word boundary (unvoicing as before word boundaries when a sonorant follows), hence the case is parallel to those analysed by Chomsky and Halle (1968: 95).

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[10] In this connection cf. L. G. Jones's experiment quoted by Jakobson et al. (1965: 38) and Shapiro's observations (1966: 193).

They compare ***resolve*** ("determine"), ***reserve*** ("withhold") with *re-solve* ("solve anew"), ***re-serve*** ("serve anew") and find that the lack of voicing of the medial obstruent in the last two examples is caused by the presence of a word boundary across which the rule of /s/ voicing between the prefix and the stem vowel does not apply. In our case further support can be gained from syntax: ***my*** may appear as a syntactically separate constituent while the English *re-* of ***re-serve*** and the Polish ***-ny*** of ***biedny*** (*-ę* of ***robię***, *sz* of ***robisz***) cannot. In this connection it is worth mentioning though not directly relevant for our discussion here that ***-by*** in ***zaniósłby***, ***zgniótłby***, ***mógłby***, ***zjadłby***, ***poszedłby***, etc., is also separated by a word boundary. A similar syntactic proof can be given here (***zaniósłby*** vs. *by* ***zaniósł***), the phonological segmental proof being obliterated by the fact that the obstruent may be voiced by rule (5) (for the last three examples see below). The analysis of ***-by*** as a separate word is additionally supported by suprasegmental facts: ***-by*** does not change the position of stress (***mogłaby*** and not ***mog'łaby***) while morphemes do: ***tele'wizor* — *telewi'zora*, *pra'cował* — *pracu'jecie***.

Summing up the unvoicing of obstruents in the above five groups can be formally expressed by a rule having the shape:

$$(9)\qquad [+\text{obstr}] \rightarrow [-\text{voice}] \Bigg/ \_\left\{\begin{matrix} \#\# \\ \#\ [+\text{sonor}] \\ (\#)\begin{bmatrix}+\text{obstr}\\-\text{voice}\end{bmatrix}\end{matrix}\right\} \qquad \begin{matrix}(a)\\(b)\\(c)\end{matrix}$$

Rule (9), as one might naturally expect, is functionally parallel to our earlier voice assimilation rules of Polish (to (5) with a reverse value). It can be noticed immediately that the "pause" generalization formulated on the basis of unvoicing in English should be extended to Polish. Now it seems to be an appropriate moment to see how the voicing and unvoicing rules apply to clusters of consonants.

Voicing:

tekst był (the style in which the whole cluster is voiced)

	t e k s t	b ɨ w
rule (5)	t e k s d	b-
rule (5)	t e k z d	
rule (5)	t e g z d	

Unvoicing:

	różdżka,	***wróżb***
	r u ž dž k a	**v r u ž b**
rule (9)	**r u ž č k a**	**v r u ž p**
rule (9)	**r u š č k a**	**v r u š p**

An important general conclusion can be drawn from these derivations: at the low phonetic level the same rule may apply sequentially (at least with voice assimilations). Lightner (1971: 551-2) is worried about the application of voicing and unvoicing rules and describes the problem as unsolved. He basically asks the question if the voicing or unvoicing is done in steps or whether it applies to the whole cluster directly. As can be seen above, our analysis is done in steps. We believe that this is preferable and better in view of the fact that (5) and (9) are regarded as assimilation rules. Since by assimilation we understand a change of a segment (more exactly feature(s) in the feature matrix which the segment represents) under the influence of another segment (feature matrix) the derivation has to be done in steps, the procedure stemming from the nature of assimilation processes. Our "pause" generalization describes the unvoicing of /b/ in *wróżb* and the like.

It is interesting to mention, though only marginally, that the separation of the features [voice] and [tense] in obstruents may occur in Polish (Biedrzycki, forthcoming). Obviously, this cannot be analysed on a par with other unvoicing rules as its ranking is much lower (it is a stylistic detail). Such separation of the two otherwise concomitant features may occur only in one style of speech (and not with all speakers), namely, when word final sonorants are unvoiced[11]. Thus in part VII in the Polish TV serial about the life of Balzac, for instance, one could notice whole voiceless endings in: *pieniędzy*, *srebra*, *wyjadę*, etc. From this we can formulate a stylistic rule (10):

$$(10) \qquad \begin{bmatrix} +\text{obstr} \\ -\text{tense} \end{bmatrix} \rightarrow [-\text{voice}] \;/\; \_\_ \begin{bmatrix} +\text{sonor} \\ -\text{voice} \end{bmatrix}$$

Marking the feature [−tense] in the left side specification signifies (as in rule (8) that the change in the feature [voice] is not accompanied by an automatic change in the feature [tense]. (10) is, as we have remarked, a stylistic rule and that is why the range of its application varies considerably. If we take *lubi*, for example, we may hear [lub'i] (the rule of unvoicing sonorants has not applied), [lub'i̥] (the sonorant unvoicing has applied but (10) has not), [lub̥'i̥] (rule (10). In fact still two other pronunciations are possible [lub̥'] or more often with a palatal friction after [p] — [lup^{ç}]. Thus there is still one context in which we may have a $\begin{bmatrix} +\text{obstr} \\ -\text{voice} \\ -\text{tense} \end{bmatrix}$ segment and this is the output of rule (11) when the voiceless vowel is deleted:

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[11] A phenomenon described by Biedrzycki and noticed by me independently. As it turned out Biedrzycki had worked it out earlier in detail and formulated in his forthcoming article "Samogłoski bezdźwięczne w języku polskim".

(11) $$\begin{bmatrix} \text{V} \\ -\text{voice} \end{bmatrix} \rightarrow \emptyset / - \# \#$$

(11) is not a fully specified rule — intonation should be included in the environment (Biedrzycki, forthcoming) and in our opinion also another context — before a voiceless obstruent but then it seems to me the change of [tense] is concomitant with the change of [voice] in the obstruent *ona robi to* [−p' ≠ to̥][12]. Furthermore, the output of rule (11) [roḅ'] is rather unstable since then the obstruent appears before a pause and consequently [−tense] tends to become [−tense] giving a form like [rop'] or [rop$^{\acute{s}}$]. Therefore we would like to suggest that (11) is ordered after (10) as only after the application of (11) is the variation [b̥'] ~ [p'] possible.

In this way we may have a low phonetic stylistic derivation along the following lines:

[lub'i] — a possible output, no unvoicing rule has applied

[lub'i̥] — a possible output, a sonorant unvoicing rule (not formulated in this paper) has applied

[lub̥i̥] — a possible output, rule (10)

[lub̥'] — a possible output, rule (11)

[lup'] — a possible output, rule (10)

[lup$^{\acute{s}}$'] — a possible output, palatal affrication rule (not formulated here).

Some difficulty may apparently arise with forms like [dobš] *dobrze* (quoted by Biedrzycki, forthcoming) and [pź] *przecież* (Jassem and Łobacz 1972 : 12). In these forms the regressive unvoicing rule (in the former) and the regressive voicing rule (in the latter) have not applied. One can notice immediately, however, that both forms are stylistic variants (occasional) brought out by stylistic deletions.

Consequently, rules (10) and (5) should be given a descriptive restriction that they may not be obligatory with some stylistic variants which are outputs of stylistic deletion rules.

Now let us examine whether the situation of *mógłby* is analogical to that of *zaniósłby*. Consider the following groups of words:

A. a) *mógł, zjadł, biegł, ansambl, módl (się), żubr, kadr, mechanizm, blizn, przyjaźń*

  b) *zdziebełko, mędrca, bieglszy*

B. a) *mógł to, zjadł tyle, biegł szybko, módl się, żubr ten, kadr takich, mechanizm starodawny*, etc.

  b) *mógł radzić, zjadł łakomie, biegł ostrożnie, żubr oswojony, kadr naszych, mechanizm nowoczesny*, etc.

C. *mógłby, zjadłby, biegłby, żubr darowany, kadr doborowych, mechanizm wynaleziony*, etc.

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[12] Only a laboratory experiment can give a final answer here.

In all the groups a phonologically voiced obstruent is followed by a sonorant. Furthermore, in A and B it is followed in turn by a devoicing context: A.a — a pause, A.b — a voiceless obstruent, B — a voiceless obstruent (a), or a sonorant (b) across word boundaries. In C the following environment is voiced but invariably there is an intervening word boundary (where *mógłby* is, as argued above, mógł # by). Our observations point to the fact that in all the groups the obstruent under discussion can be phonetically either voiced or vioceless[13]. Thus taking the first word in the list, *mógł* can always have two pronunciations [mugw] and [mukw]: *mógł, mógł to, mógł radzić, mógłby*[14]. It is not comparable to *rósł, rósłby* as here the variation [zw]~[sw] in *not* independent of context ([ruzw] in a nonvoicing environment is impossible, which stems from the fact that /s/ is phonologically [—voice]).

Therefore we would like to suggest that in cases such as *rósłby* we have a non-obligatory application of rules in some contexts while words like *mógł*, etc., have true low phonetic variant pronunciations[15] with respect to the voicing of the nonfinal obstruent (cases such as *trwać* could also be discussed under this heading). We call them variant pronunciations as they appear with any environment. Note, however, that their origin can be accounted for by a rule which is basically an expanded and slightly modified version of (9c). The unvoicing environment here is that of a word boundary or a voiceless obstruent:

$$(12) \qquad [+\text{obstr}] \rightarrow [-\text{voice}] \Big/ \_ \begin{bmatrix} +\text{sonor} \\ -\text{syll} \end{bmatrix} \left\{ \begin{matrix} \begin{bmatrix} +\text{obstr} \\ -\text{voice} \end{bmatrix} & \text{(a)} \\ \# & \text{(b)} \end{matrix} \right\}$$

The environment specification groups liquids and nasals where [w] is, as mentioned previously, a phonological liquid. Rule (12) brings up an interesting point. In words such as *mędrca* the two pronunciations one with [t] and the other with [d] originate from the context of a voiceless obstruent (12a), in *padł* or *padłby* — from a word boundary (12b).

It seems then that Lass's suggestion for German (1971: 26-7, cf. my footnote 5) applies also to Polish but the difference is that in Polish we must obligatorily have an intervening $\begin{bmatrix} +\text{sonor} \\ -\text{syll} \end{bmatrix}$ segment. It seems worthwhile in this connection to come back to our "pause" generalization and extend it to the case discussed above:

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[13] Attention should be drawn to the fact in the South-West accent of Polish this may not be the case. Presumably, there will not be such variation in the example quoted in B.b and C.

[14] As previously we take this style of speech where the final sonorant in *mógł, padł, zjadł* is not deleted. Once it is deleted the words fall together with the examples given for the obligatory application of the voicing rule (5) in the case of *mógłby*, etc., or the unvoicing rule (9) in the case of *mógł, mógł powiedzieć, mógł radzić*.

[15] Notice that the possibility of the deletion of [w] in *mógł* and the like produces another low phonetic variant pronunciation.

> pauses function as voiceless obstruents if the word begins (only English) or ends (both English and Polish) in a phonologically voiced obstruent, additionally in Polish word boundaries can have this function if a phonologically voiced obstruent is followed by a sonorant.

Finally let us consider a group of exceptional prepositions: *w*, *z*, *bez*, *od*, *nad*, *pod*, *przez*, *przed*. Unlike other prepositions (cf. *według*, *wzdłuż*, etc.) they are phonetically realized with a final voiced consonant not only before voiced obstruents but also before all sonorants. In other words *bez* has a phonetic [z] not only in *bez długu* but also in *bez rady*, *bez loterii*, *bez matki*, *bez notatek*, *bez niani*, *bez osłony*, *bez łyżki*, *bez jabłek*. Although these prepositions have in WPK the status of exceptions they need not be marked individually in the lexicon. They form a certain group distinct from other prepositions: they have a final phonologically voiced obstruent (this distinguishes them from e.g., *zamiast*, *oprócz*) and they contain not more than four segments (this distinguishes them from e.g. *wzdłuż*, also redundantly from *zamiast* etc). This group of prepositions has phonetically unvoiced final obstruents only before a pause or a voiceless obstruent. Thus only the (9a) and (9c) environments are met. Consequently the unvoicing assimilation rule (clearly a subrule of (9)) will take the shape:

$$(13)\qquad [+\text{obstr}] \rightarrow [-\text{voice}] \;/\; \_\_ \left\{ \begin{matrix} \# \begin{bmatrix} +\text{obstr} \\ -\text{voice} \end{bmatrix} \\ \#\# \end{matrix} \right\}$$

In view of Lightner's theory (1968: 70ff.) (13) should be regarded as a minor rule.

In conclusion let us review briefly what has been postulated. The examined material enables us to make statements not only referring to the contrastive analysis of Polish and English but also some of a more general nature bearing on the theory of generative phonology.

Low phonetic voicing and unvoicing in Polish and English should be regarded as a process of assimilation. This reasoning seems to be correct in every detail on the acceptance of what we have called a "pause" generalization extended to word boundaries in some cases in Polish. Although some rules have not been collapsed it is clear that in all cases we are dealing with basically the same type of assimilatory adjustments of segments. These adjustments can sometimes take different forms (as, for instance, occasionally otherwise concomitant change of the features [voice] and [tense] may be separated). Styles of speech have a considerable bearing on the application of certain rules. Thus in a few cases rules, generally taken as obligatory, turn out to apply optionally. There are words in Polish having low phonetic variant pronunciations with respect to the voicing or unvoicing of obstruents. Such pronunciations occur in different styles and are independent of the segmental context which follows. Progressive assimilation of unvoicing in Polish seems to be a productive process necessary for the discovery of the nature of underlying segments. Orthographic words cannot be always equated with phonological ones as is the case with *mógłby* and *róbmy*. Voice assimilation in English is generally obligatory while in Polish it may be optional depending primarily on the style of speech and occasionally on the number of obstruents to be assimilated.

As far as theoretical considerations are concerned three points should be stressed: (a) low phonetic rules are ordered (at least some of them), which contradicts McCawley's statement (1968: 14); (b) voice assimilation rules apply in steps and (c) sometimes the same rule may apply sequentially.

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ON CONTEXTUAL MODIFICATIONS OF PLOSIVES

JERZY RUBACH

University of Warsaw

1. INTRODUCTION

Generative phonology recognizes two significant levels of representation: systematic phonemic (underlying) and systematic phonetic, the latter is understood to consist of a set of instructions given to the organs of speech, hence it must specify phonetic details of segments. It is generally assumed that at the systematic phonemic (phonological) level features are binary (but cf. Chafe 1970 : 119 ff.) and at the systematic phonetic level they are n-ary. These n-ary values are provided by late (low) phonetic rules which Postal (1968 : 66) calls Detail Rules and McCawley (1968 : 14) Feature Interpretation Rules. Late phonetic rules do not necessarily have to be restricted to those which give integral feature coefficients. Harms (1968 : 101) rightly suggests that a possible approach is to retain the plus/minus specifications together with n-ary features. As we shall, see there are rules which specify "superficial details" (McCawley 1968 : 14) and are not integral, though their relevance only at low phonetic stages is unquestionable. There are also many phonological rules which in spite of their quite early ordering produce all the values important for the systematic phonetic representation — cf. the rules for stress assignment in English (Chomsky and Halle 1968 : ch. 3); other phonological rules imply many phonetic details which, as will be demonstrated in this paper, can be specified by certain conventions. Schane notices quite rightly that linguists working within the framework of generative phonology have paid very little attention to low phonetic derivations. They have been mostly concerned with the rules of morphophonemic function (Schane 1971 : 519). Harms (1968 : 101) stresses that it remains to be worked out how low phonetic details are to be treated. A notable exception here is

Harris who devotes the second chapter of his *Spanish phonology* (1969) to a discussion of low phonetic assimilations which are connected with different tempos of speech.

The present paper is an attempt to analyse some low phonetic phenomena characteristic to plosives. We are concerned only with plain stops, i.e., exclusively those which are unambiguously specified by the feature [+abrupt offset] (Postal 1968: 71). The paper should be taken as a contrastive study in basically two languages: English (Received Pronunciation) and Polish (Warszawska Polszczyzna Kulturalna), however, references are also made to German and French and some conclusions of a general nature are drawn.

The phonetic phenomena under consideration are: nasal modifications of stops, lateral plosion and plosion or its absence in the case of combinations[1] of stops[2]. Since generative phonology operates with distinctive features some discussion of those which are relevant for our purposes is necessary.

2. A CHOICE OF FEATURES

As already mentioned we shall be dealing with plosives and their contextual modifications by nasals and laterals. It should be noticed that all the three types of consonants belong to a natural class of [−continuant] segments. This grouping comes from the definition of the noncontinuant feature which refers to "blockage of air flow past the primary stricture" which may be total as with plosives, affricates, and nasals or partial as with [l] (Chomsky and Halle 1968 : 318, cf. the discussion: 317 - 318). With both plosives and nasals there is a complete closure in the mouth passage and the articulatory difference rests upon the fact that the former have additionally a complete blockage of the nasal passage (velic closure) while for the latter the velum is lowered and air escapes through the nose. Laterals have a blockage in the mouth but it is not total in the sense that air can escape freely on one or both sides of the tongue; what remains completely blocked is the central passage through the mouth. Further on, the three types of [−contin] consonants can be said to have three articulatory phases: I — onglide, which specifies the articulatory movement for the closure (note that for [l] the closure of the central passage is complete — the tongue is pressed against the teeth or the teeth-ridge), II — hold, which denotes a blockage of the primary stricture, III — offglide, referring to the articulatory movement releasing the closure.

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[1] By "combinations" we mean sequences of sounds with possible intervening word boundaries, the term "cluster" should be kept for combinations within words.

[2] I am grateful to my colleague, Edmund Gussmann, for helpful discussion.

With plosives offglide is associated also with plosion which in most cases (not in all, cf. section 5) is concomitant with the articulatory movement itself.
Figures 1, 2 and 3 illustrate the articulation of noncontinuant consonants, e.g. [t], [n], [l].

Fig. 1

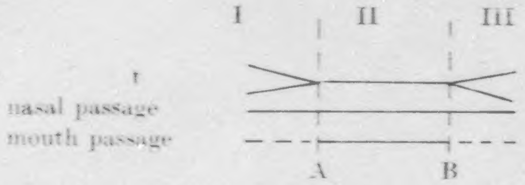


Fig. 2

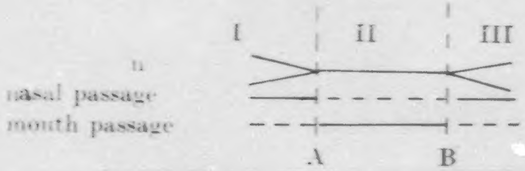
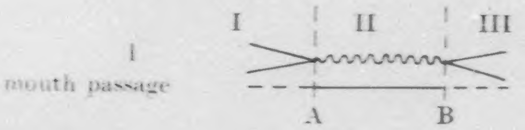


Fig. 3



where the solid line means "blockage" (in the case of the mouth passage: blockage past primary stricture), the broken line "no blockage", the wavy line with the [l] — a lateral escape. All oral sounds have velic closure, hence the blockage of the nasal passage for them is the normal state. The distance **A** — **B** specifies when the blockage past primary stricture actually occurs and thus gives a basis for denoting the segment by the [−contin] feature.

The [l] segment is usually described by the features $\begin{bmatrix}-\text{contin}\\+\text{sonor}\\-\text{nas}\end{bmatrix}$ where the [−contin] differentiates it from [**r**].

In English they are also different in anteriority: the former is [+anter] and the latter [−anter] (cf. Chomsky and Halle 1968: 177). Thus it seems that the feature [lateral] is redundant phonologically at least in English. It should be noted however, that [lateral] is indispensable for low phonetic derivations — as will be seen it describes lateral plosion of plosives. Wurzel (1970 : 195, 197) also uses it for phonological considerations. The question is open to discussion as the introduction of [lateral] on one hand simplifies the specification of the [l] segment and makes it possible to avoid the addition of features at the low phonetic stages of derivation (to mark lateral plosion) but on the other it complicates the general shape of phonology ([lateral] can be relevant phonologically for one segment only). In this paper we shall be using [lateral] as a phonological feature, which however, does not imply that this is generally a better choice. Such decision can be taken only when a full analysis of all low phonetic processes has been made and no necessity for addition of other features has been found. The [abrupt offset] feature will be taken in this paper to refer primarily to plosion which characteristically appears with plain stops. The articulatory movements for onglides and offglides need not be marked by features since they are described by means of a convention. The convention in section 3 will be drawn up on the basis of nasal assimilation rules, hence some discussion of the feature matrix for nasals and plosives is necessary. It is suggested that the following feature specifications be accepted:

	m p b	n t d (dental)	n t d (alveolar)	ŋ'k'g'	ŋ k g
Coronal	—	+	+	—	—
Anterior	+	+	+	—	—
Back	—	—	—	+	+
Distributed	+	—	+	+	—

The features are used in the sense Chomsky and Halle (1968) have described them. Our decision as to their assignment must be clarified in relation to a few points: — [±back] contrasts the postpalatal [ŋ'k'g'] and [ŋ k g] sounds with alveolo-palatals [ń ć ʒ́] as in the Polish *niania*, *ciało*, *działo*. though those have not been included in the table as we have made the restriction to deal only with plain stops. The postpalatals seem to be [+back] since the body of the tongue is retracted from its neutral position (cf. Wierzchowska 1971: 195) though certainly to a lesser extent than with velars.

— [±distrib] is widely used particularly in the descriptions of Polish. If we compare, for example, the postpalatal [k'] and the velar [k] (cf. Wierzchowska 1971 : 196), then clearly the former is [+distrib] (the length of the zone of contact is definitely greater), and the latter [—distib]. Let us accept after Harris (1969 : 12) that dentals can be distiguished from alveolars by the opposition [—distrib] vs. [+distrib]. The above feature matrix specifies all the important plosive variants and their corresponding nasal variants.

We have assumed that the rule for palatalization in Polish has already applied.

The matrix does not distinguish, however, English alveolar from postalveolar [n]: *bent* vs. *country*. The postalveolar contrast, if insisted upon (it is a minor case), can be captured by introducing integral feature coefficients with [distributed] or probably better with [coronal]. Quite naturally the blade of the tongue will be raised more with postalveolar sounds (hence a higher integer on [coronal]) than with alveolars.

3. NASAL MODIFICATIONS OF PLOSIVES

Three situations must be considered under this heading: a) a plosive is preceded by a nasal, b) a plosive is followed by a nasal, c) a plosive is both preceded and followed by a nasal. In each case the combination may be homorganic or non-homorganic.

In situation (a) the plosive is modified only if its combination with a nasal is homorganic. Consequently, the modification of the plosive should be understood as an entailment of general rules for nasal assimilation. Those are given for English and Polish by Gussmann (1974 : 114). in his recent paper on nasality His rule for nasal assimilation in Polish is:

(1 a)

$$[+\text{nasal}] \rightarrow \begin{bmatrix} \alpha\ \text{coron} \\ \beta\ \text{anter} \\ \gamma\ \text{distrib} \\ \delta\ \text{back} \end{bmatrix} \Big/ \left\{ \begin{matrix} \begin{bmatrix} \text{V} \\ -\text{high} \\ -\text{low} \end{bmatrix} \\ [+\text{foreign}] \end{matrix} \right\} — \begin{bmatrix} \alpha\ \text{coron} \\ \beta\ \text{anter} \\ \gamma\ \text{distrib} \\ \delta\ \text{back} \\ -\text{contin} \end{bmatrix}$$

Condition: does not apply across morpheme boundaries.

Gussmann (1974 : 115) gives an equally general rule for nasal assimilation in English:

(1 b)

$$[+\text{nasal}] \rightarrow \begin{bmatrix} \alpha\ \text{anter} \\ \beta\ \text{coron} \\ \delta\ \text{distrib} \end{bmatrix} \Big/ — \begin{bmatrix} \gamma\ \text{anter} \\ \beta\ \text{coron} \\ \delta\ \text{distrib} \end{bmatrix}$$

Conditions: if $\beta \neq \gamma$, then $\alpha = +$
$\beta = \gamma$ $\alpha = \beta$

It should be noticed that Gussmann's rules, although primarily meant to be phonological, provide all the major phonetic variants. Rule (1 b) can provide the distinction between dentals and alveolars, it will not, however, distinguish alveolars from postalveolars. This can be solved by assigning intergers to the feature [coronal], where [2 coron] refers to postalveolars.

Thus in ***country*** one rule assimilates what is otherwise an alveolar [t] to postalveolar under the influence of [r] and then another rule makes the preceding nasal agree in the point of articulation with the postalveolar [t]. The latter rule may be formally expressed as:

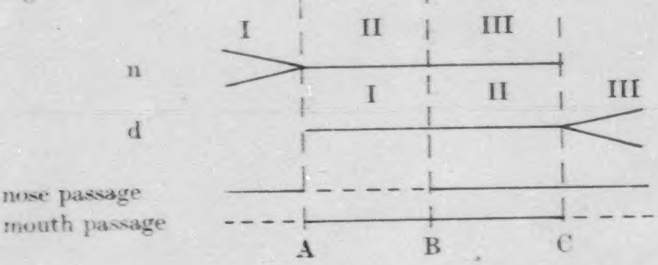
(1c)

$$[+\text{nasal}] \rightarrow [2\ \text{coron}] \Big/ — \begin{bmatrix} +\text{abr. offset} \\ 2\ \text{coron} \end{bmatrix}$$

Clearly (1c) is a late phonetic entailment rule to (1b) complementing it in the "superficial detail" which (1b) cannot account for. It should be noted also that for (1c) no conditions are necessary since by assigning the feature [+abr. offset] to the environment the rule is restricted to assimilations of nasal only before plosives and not before all obstruents.

Rule (1a) accounts for the assimilations in, e.g. *pompa*, *pęd*, *jądro*, *ręki*, *ręka*, rule (1b) for those in e.g. *pump*, *thousandth*, *enter*, *bank*, and (1c) for *country*, *husbandry*[3]. The above rules produce homorganic clusters of nasal and plosives. The homorganity of segments has certain articulatory entailments. There is only one articulatory movement of onglide and it is the one for the nasal, and only one offglide movement — the one for the plosive. Phase III of the nasal is blocked by the hold phase of the plosive, and inversely phase I for the stop is blocked by the oral hold for the nasal.

Fig. 4



where A—B, B—C show clearly that we are dealing with two noncontinuant segments. In other words, the articulators do not have to reach the place of articulation for the plosive since they are already there while producing the nasal. Thus from the articulatory point of view the plosive is incomplete. As already mentioned this phonetic situation is a natural result of the fact that the segments are homorganic.

Let us establish then homorganity *entailment convention*[4] which in a *first approximation* will read as follows: if a plosive is preceded by a homorganic

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[3] If [tr] and [dr] were taken as affricates, as it is sometimes done (cf. Jones 1956 : 165 - 6) then rule (1c) is unnecessary and (1 b) can handle all cases.

[4] The use of conventions in generative phonology is quite legitimate and widespread. Apart from the obvious notational devices such as Greek letter variables (cf. Harms 1968 : ch. 7, comparing it with Wheeler's discussion in his 1972 article), cf. Kisseberth's (1970) functional unity of rules, Bach's "neighbourhood convention" (1968 : 29), Chafe's suggestion of "entailment conventions" (1970 : 118) for phonological considerations (we are using them but only at the low phonetic level), also Wilson's implicational rules" (1966 : 220) should be understood as conventions.

nasal segment then it (i.e. the plosive) lacks the articulatory movement of onglide. The convention is clearly an entailment to the assimilation rules. It is worth mentioning that the same convention will apply not only to English and Polish but also to other languages: German: *unter*, French: *montagne*. Now let us consider a reverse situation when a plosive is followed by a nasal. The combination may be either homorganic or non-homorganic. It seems more convenient to discuss the latter type first.

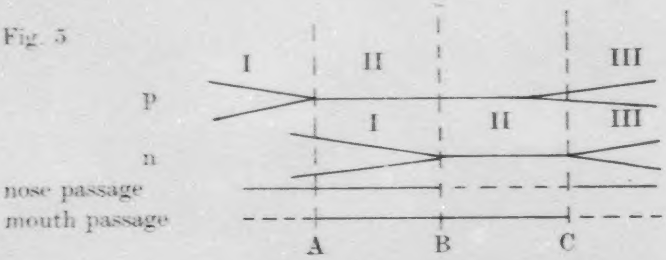
In Polish if a nasal is not homorganic with the preceding plosive, the plosive is not affected at all, i.e., it is complete in its articulatory movements and the plosion is oral. This generally accepted statement should be viewed, however, with certain caution. It may not be entirely true if some stylistic variations are taken into account. Our observations show that there might be nasal plosion in non-homorganic combinations in Polish (e.g. *astma na dnie*, where the latter is taken in its low phonetic shape[5]) though oral plosion is definitely more common here. The situation in English is much simpler: there does not seem to be any variation — if a plosive is followed by a nasal the plosion is normally nasal (cf. Jassem 1971 : 175 ff.; Gimson 1966 : 153).

The articulatory process is interesting: "the plosive closure is not normally released until the articulatory movements for the nasal consonant, i.e., the second oral closure and the lowering of the soft palate, have been accomplished" (Gimson 1966 : 153).

In other words, the plosive has both onglide and offglide movements but since the hold of the nasal largely extends over phase III and partly over phase II of the plosive, air cannot escape through the mouth but it must flow through the nose as the velic closure is released the moment the hold of the nasal begins.

Figure 5 illustrates the process:

Fig. 5



as in *hypnotize, that mother, big monkey, black man*.

At first glance it seems that a rule like (2) can account for the above phonetic phenomenon:

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[5] Phonologically *dnie* has a homorganic cluster as the form is an obvious reflex of the word *dno*.

$$(2) \qquad [+\text{abr. offset}] \rightarrow [+\text{nas}] / -(\#)[+\text{nas}]$$

The rule would read: a [+abr. offset] segment becomes nasalized in the context of the following nasal where the presence or absence of word boundary is immaterial. This suggests that the nasalization is of the same type as in the Polish *są* [s ɔ̃ w̃]. A solution like this is clearly unacceptable since the nasalisation of the vocalic segments in *są* and the nasal plosion of a stop cannot intuitively, i.e. even without doing a far-going linguistic analysis, be put on a par. Evidently the nasalization in the Polish example extends over whole segments and with plosives only over parts of segments. What actually happens in e.g. ***hypnotize*** is the nasalization of the plosion, i.e. phase III. Hence a rule like (3) is necessary:

$$(3) \qquad [+\text{abr. offset}] \rightarrow [+\text{nas}] / -(\#)[+\text{nas}]$$

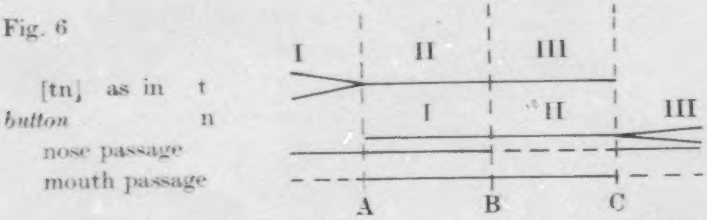
The rule specifies two things: a) the feature on the right side of the arrow is imposed only on a certain part of the segment which appears on the left side of the arrow, b) by convention it is the last part of the left side segment which is affected by the rule. The working of rule (3) is described by the notational device which we have introduced: the dotted brackets denote that the feature embraced by them modifies the last part of the segment which undergoes the rule.

Rule (3) highlights an important general conclusion. It seems that *in low phonetic derivations rules may refer not only to whole segments* (as is always the case phonologically) *but also to parts of segments*. As will be seen later the analysis of lateral plosion and the clusters of plosives provide further support for this statement.

In our earlier discussion we mentioned that basically only English permits nasal plosion with non-homorganic plosive-nasal combinations. Thus rule (3) having no homorganity condition applies to English and possibly to some variant stylistic pronunciations in Polish; these are, however, uncommon. Polish has a regular nasal plosion only with homorganic combinations (cf. Jassem 1971 : 175 ff.), for English this restriction is unnecessary. However, as previously some allowances must be made for stylistic variations in Polish. We have observed that there are occasional oral plosion pronunciations of plosives in words such as: *Etna* (although this example is quoted as typical for nasal plosion, cf. Benni 1959 : 21), *biedny* in spite of the fact that the clusters are homorganic. Oral plosion is quite common if the cluster appears in the word-initial position: *dno, tnę*. These variations may only suggest the optionality of some low phonetic rules in certain styles, and they cannot be taken as evidence against the statement about the regularity of nasal plosion in homorganic combinations in Polish.

Articulatorily, such combinations have two implications for the plosive: a) there is no offglide movement since the closure for the nasal is made at the same place in the mouth and phase II of the nasal blocks the offglide for the plosive, b) the oral closure for the nasal is simultaneous with the lowering of the soft palate, hence the air compressed for the plosive escapes through the nose — the plosion is nasal.

Fig. 6



Further examples — English: *topmost, submit*; Polish: *kupmy, samotny*; German: *halten, Halden*; French: *tu tapes mal* (Grammont 1933 : 37).

It is immediately clear that as far as the articulatory movements for the plosive are concerned Fig. 6 is a mirror image of Fig. 4. We should recall that the lack of onglide was expressed by first approximation to the homorganity entailment convention. It seems natural that the lack of the offglide movement be expressed by the same convention. In order to do it the convention must be extended to include not only the nasal — plosive context but also the plosive — nasal one. Thus in its extended version the ***homorganity entailment convention*** should be phrased as follows: if a plosive is preceded by a homorganic nasal segment then it lacks the articulatory movement of onglide, if it is followed by such segment it lacks the articulatory movement of offglide. As we shall see later, the convention may be extended still further to cover all types of homorganic segments appearing in a combination with plosives, hence the above wording of the convention cannot be treated as final but rather as a ***second approximation***.

As has already been mentioned it is normal for Polish disregarding the unnumerous stylistic variations to have nasal plosion with stops in homorganic combinations. Rule (3) is too general here since the homorganity condition is not placed on its application. Thus specifically for Polish rule (3) should be restricted to (3'):

$$\text{(3')}\qquad \begin{bmatrix}+\text{abr. offset}\\ \alpha\ \text{coron}\\ +\text{anter}\end{bmatrix} \rightarrow [+\text{nas}] / -(\#) \begin{bmatrix}+\text{nas}\\ \alpha\ \text{coron}\\ +\text{anter}\end{bmatrix}$$

The Greek letter variable with the feature [coronal] shows that the plosive and the nasal must agree in their place of articulation in order for nasal plosion to occur. Thus the rule does not normally apply, for example, to *chleb nasz* since [p] is

$$\begin{bmatrix} -\text{coron} \\ +\text{anter} \end{bmatrix} \quad \text{and} \quad [\text{n}] \quad - \quad \begin{bmatrix} +\text{coron} \\ +\text{anter} \end{bmatrix}.$$

It is not necessary to have a variable with [anterior] because the rules of segment combinations for Polish plosive — nasal sequences are in fact restricted to labials and dentals; therefore the feature [anterior] will be invariably "plus". Furthermore, it is interesting to notice that in English and German the homorganity of plosive — nasal clusters may be an output of progressive assimilation within words. The progressive assimilation rule should be regarded as having phonological status. It is clearly ordered after the Schwa Deletion Rule.

The rule affects [n] and assimilates it either to [m] or to [η] depending on whether the plosive preceding the nasal is bilabial or velar:

(4)

$$\begin{bmatrix} +\text{nas} \\ \\ +\text{coron} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{coron} \\ \\ \alpha\ \text{anter} \end{bmatrix} \Bigg/ \begin{bmatrix} -\text{contin} \\ -\text{sonor} \\ -\text{coron} \\ \alpha\ \text{anter} \end{bmatrix} - \ \#$$

Wurzel (1970: 220) has rightly drawn attention to the fact that the word boundary (here symbolized #) is necessary in the environment specification to inhibit the derivation of forms like *[gη-] or *[kη-] in word—initial position, e.g. in *Knabe* and to explain why in [troknən], [ebnən] there is no progressive assimilation.

Rule (4) applies to German: *haben, sagen, Wappen, stecken* (after Martens 1961: 233) and English: *happen, bacon, taken*, etc. In English at least the applicability of (4) is optional in the sense that although the schwa has been deleted, intermediate non-assimilated forms are possible, hence we may have [beikən], [beikn] or [beikη]. These are not exactly free variants since they will be obviously associated with different styles or more accurately tempos of speech. Thus in Allegro pronunciation one may expect that the assimilated, [beikη] type forms will be always used. It suggests then that rule (4) be primarily associated with rapid speech.

We should recall that at the beginning of this section we mentioned the possibility of a plosive being both preceded and followed by a nasal. As previously let us consider two situations: a) a plosive is followed by a non-homorganic nasal, b) it is followed by a homorganic nasal. If the plosive is followed by a non-homorganic nasal it has the articulatory movement of offglide but its plosion is nasal. This clearly refers only to English, as in Polish the plosion would be normally oral, hence the plosive is not modified at all.

Consider the modification of [t] in English *Saint Martin*:

Fig. 7

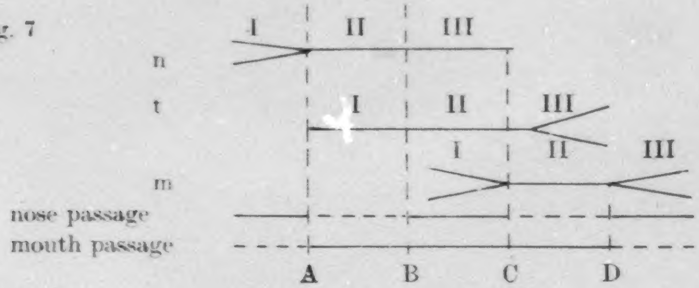
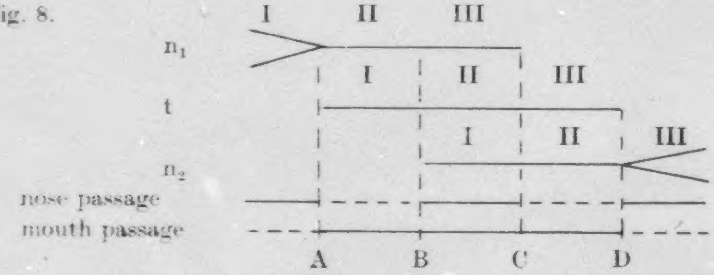


Figure 7 combines figure 4 (to illustrate the relations holding between [n] and [t]) and figure 5 (to show the relation holding between [t] nad [m]). The relations between [n] and [t] (the lack of onglide for [t]), are expressed by the homorganity assimilation convention—its first part applies— the nasal is homorganic with the following plosive; the relations between [t] and [m] (the nasal plosion of the stop) are handled by rule (3). If the nasal following the plosive is homorganic with it the homorganity entailment convention applies in both its parts. It specifies that the plosive has neither onglide nor offglide movements. The plosion is nasal, which is expressed by rule (3) or to be more accurate by rule (3'). Consider figure 8 which is a combined representation of figure 4 and figure 6.

Fig. 8.



as in *Saint Nicholas* or *błędny*.

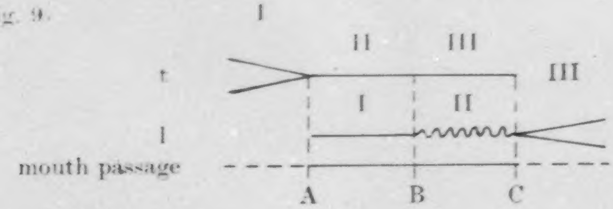
Further examples: English: *stamp machine*, *pump more*; Polish *wstąpmy*, *mętny*, *błąd nasz*, German: *Lampen*, *Bomben*, *Finten*, *finden*, *schenken* (Martens 1961 : 235). It should be noticed that in German the final [—mpm], [—mbm] [—ndn] [ŋkŋ] are outputs of rule (4). Furthermore, rule (3') should be modified for German as the homorganity extends also to velar clusters. Thus instead of having [+anter] we must allow this feature to take the variable β.

We have accounted for nasal plosion in cases like *Saint Nicholas* by rule (3). Recall, however that (3) has an *optional* word boundary after the environmental bar. In cases such as those illustrated by figure 8 the word boundary is no longer optional, it becomes obligatory. In other words, the sequence nasal — plosive — nasal can only occur in English across word boundaries, where the # comes after the plosive and before the second nasal. Consequently, in words such as *London, correspondence, sentence, incumbent* the schwa [ə] cannot be deleted (Jones 1956 : 97)[6]. This has to be borne in mind while formulating the Schwa Deletion Rule.

4. LATERAL PLOSION

Articulatorily, lateral plosion signifies the lowering of one or both sides of the tongue, which allows the air compressed for the plosive to escape laterally. Clearly lateral plosion occurs when a plosive is followed by a lateral, i.e. [l]. In the case of [p b k g] it may not be contextually conditioned as these plosives can themselves have a lateral release (Gimson 1966 : 153). Thus only the lateral plosion of [t d] is truely conditioned by the context. Consequently, we shall analyse only these cases. The above described articulatory process can be illustrated by figure 9:

Fig. 9.



[tl] as in *little*.

The analysis of the velic action is not necessary here as both [t] and [l] are oral sounds, hence the soft palate remains raised all the time. As previously the distances A — B and B — C show that we are dealing with noncontinuant segments (the mouth passage is blocked at its primary stricture). The wavy line denotes a lateral escape of air.

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[6] Our observations confirm Jones's statement: an R.P. native speaker who had a very good command of German (over year's studies in Austria) was asked to pronounce *Finten* in German. He insisted on the pronunciation [ˈfintən].
Also other examples proved his inability to produce a nasal-plosive-nasal cluster within one word. A common mistake for Polish learners of English is the pronunciation of words like *sentence* with nasal plosion, i. e., they delete [ə] and then automatically nasal plosion must occur.

At first glance one can notice that the situation as described by figure 9 is parallel to that illustrated by figure 6 for *button*. The plosive is modified in two respects: it has no articulatory movement of offglide, its plosion is not central but lateral. Lateral plosion can be expressed by a rule formulated along the same lines as for nasal plosion (rule (3)) since in both cases it is the plosion which is modified, the only difference being that of the segment to which the plosion is assimilated.
Thus rule (5) mirrors (3):

(5)

$$\begin{bmatrix} +\text{abr. offset} \\ +\text{coron} \\ +\text{anter} \end{bmatrix} \rightarrow [+\text{lateral}] / -(\#)\,[+\text{lateral}]$$

The articulatory incompleteness of the plosive is due to the fact that [l] is homorganic with [t]. This can be adequately expressed by our *homorganity entailement convention* in its second approximation with one proviso — the conditioning segment need not be a nasal, it may be a lateral.

Notice that if [l] precedes [t] or [d] (*belt, folder*) the plosives lack onglides. Thus the lateral modifies the articulatory movements of the plosive in exactly the same manner as the nasal. Therefore in a *third approximation* the convention is changed only in the sense that the option is given to the conditioning homorganic segment to be either a nasal or a lateral.

Lateral plosion is a common phenomenon in English, Polish, and German: *little, bottle, middle, exactly, at last, at least*; *butla, dla, pętla, podlać*; *Mantel, Mittel, Windel, Handel* (note lateral plosion after the schwa has been deleted), *Handlung, Handler*.
Rule (5) is obligatory in educated speech. The lack of lateral plosion in [t d] plus [l] combinations would mean the introduction of a certain vocalic segment (or aspiration — as in English with voiceless stops) between the plosive and [l]. In English it is attested in the speech of children (Gimson 1966 : 153), in Polish a pronunciation like [butəla] sounds quite unnatural.

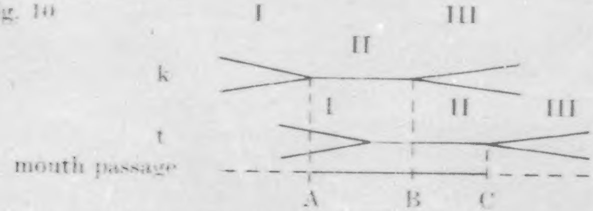
5. LACK OF PLOSION

In section 3 and 4 we were discussing the modifications of plosives by nasals and laterals, i.e. by noncontinuant segments. It is to be expected then that plosives can be modified by all types of noncontinuants, that is to say, also by plosives and affricates. As we shall see this expectation is correct in many respects.

Plosives can appear in sequences either within words or across word boundaries.

Let us first consider clusters of plosives within words. In English always and in Polish normally (notable exceptions are *lekko* and the like) they are non-homorganic, which is also a frequent case at word boundaries. Such clusters in Polish are uninteresting since plosives are not modified in any way unlike as in English. A widely accepted statement is that if we have two plosives in English (even non-homorganic plosives) the first is described as "unexploded" i.e., it has no plosion. Cf. figure 10 showing the articulation of [k] and [t] in *act*[7]:

Fig. 10



[k] has no plosion because although the articulators can glide off freely the escape of air is blocked by the closure (phase II of [t]) made for the other plosive, hence auditorily [k] is felt as a period of silence.

The process can be expressed by a rule functionally similar to rules (3) and (5):

$$(6) \qquad [+\text{abr. offset}] \rightarrow [-\text{abr. offset}] \,/\, \_\_ (\#) \begin{bmatrix} -\text{contin} \\ -\text{sonor} \end{bmatrix}$$

The rule says that abrupt offset segments (plosives) lack abrupt offset (plosion) in the context of obstruent noncontinuants, where the presence of word boundary is immaterial. Characteristically the environment includes also affricates as they also cause the lack of plosion of the preceding plosive.

Examples are numerous: *fact, apt, inspector, big car, that church*, etc. Our practical observations show that in some cases Rule (6) may not be absolutely obligatory, particularly in slow or overcareful speech. This is especially true of clusters with the Past morpheme suffix. It seems that, for instance, in *cooked, worked, marked, hoped*, etc. one can sometimes detect two plosions, i.e., the first stop is complete not only articulatorily but also auditorily. The presence of two plosions in such cases does not immediately label a non-native speaker of English as a foreigner[8].

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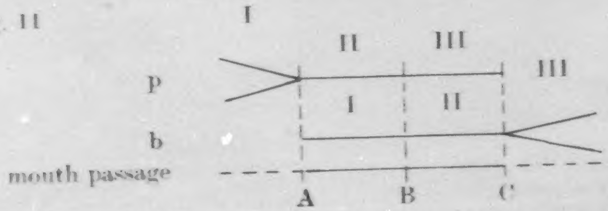
[7] The figure is a modified version of Abercrombie's (1965 : 146) diagram.

[8] A native speaker of English was asked to identify the features of a foreign accent in the speech of one of the readers in *Say it with us*, a well-known record course of English for advanced Polish learners. He pointed out a number of cases, however, none of them being the two plosions in non-homorganic combinations of plosives. In a later discussion he insisted that the presence of two plosions in *talked*, for example, could not label anybody as a foreigner.

These observations are supported by the carefulness with which Jones (1956 : 139 ff.) refers to the lack of plosion of the first stop in non-homorganic combinations. In German and French the situation is the same as in Polish: in non-homorganic combinations plosives are not affected in any way they have a central oral plosion (cf. Abercrombie's figure 1965 : 147), e.g. *gesagt, gibt, la fatique de…, apt, apteka, takt, tkać.*

All the four languages referred to in this paper are similar in one respect: in combinations of homorganic plosives the first is incomplete both articulatorily (lack of offglide movement) and auditorily (lack of plosion), the second is modified only articulatorily in the sense that it has no onglide movement:

Fig. 11



as in *scrap book* or in *pod domem, kalt Tee, avec, calme*. The lack of plosion of the first plosive is adequately expressed by Rule (6) but for Polish, German, and French it must be restricted only to homorganic combinations:

(6')

$$\begin{bmatrix} +\text{abr. offset} \\ \alpha\ \text{coron} \\ \beta\ \text{anter} \\ \gamma\ \text{back} \end{bmatrix} \rightarrow [-\text{abr. offset}] / \_\_\ (\#) \begin{bmatrix} -\text{contin} \\ -\text{sonor} \\ \alpha\ \text{coron} \\ \beta\ \text{anter} \\ \gamma\ \text{back} \end{bmatrix}$$

In the environment of (6') the presence of word boundary is given as optional. In fact in most cases the # will be present. It is only absent in a few cases, such as *lekko* in Polish, where the Cluster Simplification Rule (probably existing not only for English but also for Polish) has not applied. The articulatory incompleteness of both plosives is due to the fact that they are homorganic. It follows then that this case should also be incorporated into the homorganity entailment convention. As it stands (cf. approximation 3) it refers only to nasals and laterals as conditioning segments. Now we add up plosives and affricates. As these four groups of consonants belong to the noncontinuant class *the homorganity entailment convention in reference to* plosives reads in its final version as follows:

if a plosive is preceded by a homorganic noncontinuant segment it lacks the articulatory movement of onglide.

It is tempting to generalize this convention still further. Another look at figures 4, 6, 8, 9, 11 tells us that in fact not only plosives but also other noncontinuants (cf. nasals and laterals) are modified in their articulatory movements in exactly the same manner. Thus the above version of the *homorganity entailment convention* can be generalized to apply to all noncontinuant segments preceded or followed by other noncontinuants.

Larger combinations of plosives do not complicate matters. They should be analysed as complex two-term combinations. Thus in *act badly* the relations between [k] and [t] on one hand, and [t] and [b] on the other, are described by rule (6). In *looked down* in addition to (6) the homorganity entailment convention applies. In the Polish *akt ten* rule (6') and the convention specify the relations between $[t]_1$ and $[t]_2$. The processes at work in such combinations can be symbolized by a joint representation of figures 10 and 11.

6. CONCLUSIONS

A contrastive analysis shows that some phenomena are common to both English and Polish (nasal plosion — English rule (3), Polish — (3'); lateral plosion — rule (5), lack of plosion — rule (6) for English and (6') for Polish). Since the low phonetic processes are basically the same, English differs from Polish particularly in the scope of rule application — for Polish the rules have to be restricted in most cases to apply only to homorganic combinations (hence (3') and (6')). Attention has been drawn to the importance of stylistic variations which might sometimes cause a rearrangement of rules — thus, for instance, rule (3) may apply to Polish without restricting it to (3') if we describe a certain style in Polish which allows for nasal plosion to occur also in non-homorganic combinations. As these stylistic variations are not common, they cannot in any way call into question the correctness of the general statements of rule application as given above. We have analysed all the noncontinuant segments as consisting of three phases from the articulatory point of view. Onglides and offglides can be modified in different ways due to the late phonetic assimilatory processes. For the modifications of the articulatory movements we have established the homorganity entailment convention which in its generalized version specifies articulatory interdependence of all noncontinuant segments.

Finally probably the most important conclusion drawn on the basis of the analyses made in this paper: in low phonetic derivations rules may refer not only to whole segments but also to parts of segments. For this phenemenon we have established the notional convention of dotted bracketing used in rules 3, 5 and 6. Furthermore, these rules should be regarded as functionally similar as they refer to the modifications of plosion.

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INTONATION AND EMPHASIS IN POLISH AND ENGLISH

Bogusław Marek

Maria Curie-Skłodowska University, Lublin

It is generally accepted that intonation can serve as a means of expressing emphasis. A study of the two phenomena seems promising not only because their treatment within the framework of any linguistic theory has not been satisfactory but also because emphasis is a semantic category while intonation contours are assigned by rules of the phonological component. That surface structure is not sufficient for the application of those rules and that some reference must be made to a deeper level of an utterance is clear from several recent publications. The question whether preference should be given to the deep, syntactic structure, or to the semantic, conceptual structure also seems to pose no serious difficulties, particularly in view of an article by D. Bolinger (1972) which provides a convincing criticism of the Chomsky and Halle Nuclear Stress Rule (Chomsky, Halle 1968) and its modification by Bresnan (1971). A quotation from Bolinger (1972 : 644) summarizes his approach: "The distribution of sentence accents is not determined by syntactic structure but by semantic and emotional highlightings". An analysis of emphasis in relation to intonation will support this view, at least partly.

No reference will be made to those realizations of emotional emphasis which can be described in terms of word tempo or kinesics, an approach adopted by Lawendowski (1970). An interesting semantic approach to the problems discussed in the present paper was suggested by E. Gussmann in his article "Global rules and phonological processes" (1974). His rule, however assigning emphatic intonation covers only those cases where a contrast is expressed but it does not explain emotive emphasis. The present paper is an attempt to fill this gap.

If it is assumed that two sentences express different meanings if their underlying semantic structures are different then it must also be true that sentences to which different intonation contours have been assigned, and which therefore express different meanings, are also derived from different underlying structures (cf. Marek 1972 : 425). The reverse of this statement indicates that the semantic structure of an utterance determines the intonation which this utterance receives in the phonetic representation. Examples concerning emphasis illustrate this view:

1a. ˈRoger is a ˎteacher
1b. ˋRoger is a ˌteacher
2a. ˈRobert jest Angˎlikiem
2b. ˋRobert jest Angˌlikiem
3a. Maˈrysia jest tanˎcerką
3b. Maˈrysia jest tanˋcerką

Sentences of each pair differ in meaning in that examples 1b, 2b and 3b express a contrast which is either absent or less obvious in sentences 1a, 2a and 3a. The latter are in fact ambiguous. Although they appear to be "neutral" (the term will be discussed later) they can express a contrast just as sentences 1b, 2b and 3b do, although neither syntactic nor phonetic signals of emphasis are present. The only information suggesting such a contrast will in some cases be the context (either expressed verbally or provided by a situation): In other words, one does not need a complicated intonation pattern to express a contrast as for example a Rise-Fall in 4:

4. I ˈdidn't ˈdo it for ˆfun. Iˈdid it on ˆpurpose.

In some cases the only explanation of emphasis is a semantic one, provided by context as in 1a, 2a and 5:

(Roger is an actor, isn't he?)
5. ˎNo. ˈRoger is a ˎteacher (not an actor)

Before an attempt to concentrate on the relation of emphasis to intonation is made it seems necessary to explain the nature of neutral cases which will be referred to as "least marked sentences". The term was introduced by W. Chafe (1970) and roughly corresponds to what Quirk and others (1972 : 938) call "neutral focus", namely a sentence which has an "end-focus" that is "chief prominence on the last open-class item or proper noun in the clause".

There seems to be no common opinion as to the nature of focus among various generative approaches. According to Chomsky for example, "the focus is determined by the surface structure, namely as the phrase containing the intonation center" (Chomsky 1972 : 9), a view opposed by G. Lakoff (1971).

Neither Chomsky's nor Quirk's approach seem sutiable for the needs of the present paper as both of them imply a somewhat automatical assignment of the nucleus on the last stressable element of the clause.

The only interpretation of a shift of the nucleus to an earlier position can be, according to Quirk, a contrastive one, and certain irregularities are explained by "general cultural norms" (Quirk 1972 : 939) like in the sentence:

6. The ˋkettle's ˌboiling

(as the only thing we can say about kettles is that they are boiling).

If the above statement is true then the deviation from end-focus in sentence 7 should either be interpreted contrastively, or, by some "general cultural norms".

7a. ˋMary has arˌrived

7b. Maˋrysia przyjeˌchała

As the latter possibility seems to be out of the question let us consider the former. Indeed, the sentence can mean that it is Mary who has arrived and not Pat. But the same sentence can be an equally good response to the question:

(What's the news?)

8a. ˋMary has arˌrived

8b. Maˋrysia przyjeˌchała

where obviously no contrast is present and, what's more, the neutral "end-focus" is out of place:

9a. ˈMary has arˎrived

9b. Maˈrysia przyjeˎchała

A number of other examples can be given to show that the context may require a placement of the nucleus which differs from the neutral, end-focus position, with no consequent contrast. Consider the pair of sentences:

10a. Poˈlecam panu te kreˎwetki (speaker 1)

10b. Smakoˎwały mi te kreˌwetki (speaker 2, some time later)

Here the deviation results from the distinction between new and given information. Sentence 10a may be a response either to a question like "What shall I have next? or "What would you recommend?" where the product is the only new information. In sentence 10b, however, what functioned as focus is now "given" and the new information the speaker expresses is that he liked the shrimps. No contrast is involved, while a neutral, end-focus placement of the nucleus would produce an effect unnatural for the context described, perhaps even that of emphasis:

10c. Smakoˈwały mi te kreˎwetki

Accepting the statement concerning the "contrastive" consequence of shifting the nucleus (although it will later have to be modified if it is kept in mind that intonation is determined by the semantic structure), we can explain the non-emphatic character of sentences 8a and 8b if we agree that no shift was present in their derivation and that some element of the semantic structure determined a direct placement of the nucleus on the non-final proper name.

The approach adopted in this paper which will help clarify the problems presented so far is largely based on the semantic theory proposed by W.

Chafe (1970), and the term "focus" will be used in a sense slightly different from that in which it is used in current publications. I suggest that FOCUS is a specification assigned to an element of semantic structure before the latter enters any postsemantic processes, and which can later be manifested in the surface structure by means of a nucleus placed on a corresponding element.

In case of the "least marked sentences" the focus is assigned according to the following set of rules:

If the semantic structure is made up of a verb root alone then this verb root receives the feature FOC (focus)

11. V ——→ V
root root
FOC

11a. It's ˎ*raining*

The FOC is assigned to an action verb root if the semantic structure is composed of this verb root and an agent noun root

12. act act
V ——→ V/agt
root root
FOC

12a. David ˎ*laughed*

If the semantic structure contains a patient the feature FOC will be assigned to it if it also contains a beneficiary or an agent noun root

pat pat ben
13. N ——→ N/ agt
root root
FOC

13a. ˈMary ˈopened the ˎ*box*

A beneficiary noun root will not normally receive the specification FOC although there are cases when a FOC on this element seems quite natural:

14. ˈThis ˈhouse be ˈlongs to ˎMary

A location noun root, if present, will always have the feature FOC (except for sentences with existential "there").

15. loc loc
N ——→ N
root root
FOC

15a. The ˈbook is on the ˎ*table* (but: There is a ˎbook on the ˌtable)

The principle of FOC assignement seems to hold true for Polish.

16. ˎPada. ˎŚciemnia się

17. ˈJanek ˎzaśmiał się. ˈJacek mnie ˎbije

18. ˈJanek wylał ˎmleko
19. ˈKsiążka leży na ˎstole (but: Na ˈstole leży ˎksiążka)

Sentences like

20. ˈPada ˎdeszcz. ˈIdzie ˎburza

are not subject to rule 12, probably because the verbs "pada" and "idzie" are not used in the sense of action performed by an agent.

A similar doubt may arise with sentences like:

21a. ˋMary has arˌrived
21b. ˋŚwiatło ˌzgasło

Again the verb root which is originally specified as "action" is used here to denote a state or a given situation rather than action. This becomes clear if we analyse the context in which 21a and 21b can appear. "What's the news?" or "What happened?" seem to be more appropriate questions than, say, "What did Mary do?" (she arrived) or, "What did the light do?" (it went out).

Having described the least marked sentences we are now almost ready to analyse the nature of emphasis and the principle underlying its phonetic manifestation. Let us first have a look at some examples.

22a. ˈRoger is a ˎteacher
22b. ˈRoger jest nauczyˎcielem

23a. ˈRoger is a ˋteacher
23b. ˈRoger jest nauczyˋcielem

24a. ˋRoger is a ˌteacher
24b. ˋRoger jest nauczyˌcielem

25a. ˋMary has arˌrived
25b. Maˋrysia przyjeˌchała

26a. I ˌdon't know what to ˋsay!
I'm so ˋglad to ˌsee you!
It's ˋbeautiful!

26b. ˈCo ja teraz ˎzrobię?
ˈCo za ˎradość!
Jak tu ˋślicznie!

All of the above sentences can be interpreted as emphatic although some of them are ambiguous. It can also be seen that the list contains examples for both contrastive and emotive emphasis. Sentences 22a and 22b can express a contrast in a certain context which must be the same for sentences 23a and 23b. In such a "contrastive" sentence the FOC is assigned to the element which is contrasted. This can either be manifested by special intonation (a High-Fall or extra force) or not but nevertheless the emphasis is present.

We can capture this by means of a rule which places a feature EMPH (emphasis) on focus in a contrastive sentence.

27. $\underset{\text{FOC}}{\text{X}} \dashrightarrow \underset{\text{EMPH}}{\text{X}} / \text{contr}$

The context may sometimes require a shift of FOC from the neutral position of "least marked sentences" and place it on some other element of the semantic structure. We must therefore have an optional rule allowing for it.

28. $\underset{\alpha\,\text{FOC}}{\text{X}} \qquad \underset{-\alpha\,\text{FOC}}{\text{X}}$

It was mentioned earlier in the paper that such a shift produces emphasis. We then need a rule which will assign the feature EMPH to the focussed element (focussed, that is one which originally did not have this specification). The rule for contrastive emphasis (27) in its present form is not sufficient as not all instances of such a shift will involve a contrast. Sentences 24a and 24b illustrate two instances: one in which Roger is contrasted with somebody who is not a teacher, and one in which the sentence is a response to a question or statement of the sort:

29. I'm looking for a teacher. Do you know of one?

It seems that a modification of the emphatic rule can solve this problem. If FOC_1 stands for an originally focussed element and FOC_2 for an element focussed by rule 28 then the rule will acquire the following shape:

30. $\underset{\begin{Bmatrix}\text{FOC}_1\\ \text{FOC}_2\end{Bmatrix}}{\text{X}} \longrightarrow \underset{\text{EMPH}}{\text{X}} \begin{Bmatrix}\text{contr}\\ -\end{Bmatrix}$.

Sentences 25a and 25b are also ambiguous. Each of them can in fact, in different contexts, mean three different things:

— they can either be "least marked sentences", the instance explained earlier in the paper;

— they can express a contrast by virtue of rule 30, (rule 28, shifting the focus does not apply);

— they can involve the application of an optional rule to produce emotive emphasis

31. $\underset{\text{FOC}}{\text{X}} \longrightarrow \underset{\text{EMPH}}{\text{X}} / \text{emot}$

31a. ˋListen everybody! ˋMary has arˌrived!

31b. ˈPatrzcie ˋpaństwo! Maˋrysia przyjeˌchała!

Sentences 26a and 26b will also be subject to the last rule as they all express emphasis for intensity. The application of this rule will normally be manifested in the phonetic representation by means of intonation, tempo, loudness, etc.

The above observations can be summarized as follows:

1. An analysis of intonation and emphasis necessitates reference to the semantic structure which underlies all processes resulting in what is interpreted as "contrast" and which, to a great extent, determines the intonation contour (if not its complete form then at least it specifies the position of the nucleus).

2. Emphasis for contrast is a result of an obligatory rule which applies in certain contexts.

3. The rule for emotive emphasis is optional and no linguistic context is necessary for its application. Whether it applies or not depends entirely on the speaker and his emotional attitude.

4. Intonation serves in a majority of cases as a means of expressing (or recognizing) both types of emphasis although there are cases when no such information is present in sentences expressing contrast. It must be kept in mind though, that the placement of the nucleus which signals such a contrast is determined by the semantic structure of an utterance.

5. There are also sentences in which an apparent shift of the nucleus is in fact a case of a least marked (neutral) sentence, or of emotive emphasis expressing no contrast at all.

It seems that the nature of emphasis and the principle underlying intonation assignment are basically the same in Polish and English. What may, and does differ, is the manifestation in the phonetic representation. A detailed study would have to include various attitudes which may accompany emphatic sentences such as surprise, anger and the like which would amount to a separate paper.

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GRAMMAR

ON SOME PROPERTIES OF ACTION NOMINALS IN POLISH AND THEIR ENGLISH EQUIVALENTS[1]

BARBARA LEWANDOWSKA

University of Łódź

The term *Action Nominals* will be used throughout the present paper to denote the names of actions expressed in Polish by derivatives of the *propozycja* type, called henceforth ***a deverbal substantive***, as well as ***a verbal substantive*** with the derivational endings $\left\{\begin{matrix}-enie\\-anie\\-cie\end{matrix}\right\}$, e.g., ***czytanie, robienie, mycie*** (cf. Puzynina 1969 : 28), corresponding basically to ***-ing of*** nominals in English though sharing certain characteristics also with the English gerundives.

In English three corresponding types of nominal occur in the regular usage: the nominal derivatives of verbs of the ***proposal*** type (***deverbal substantive***), called ***substantive nominalizations*** by B. Fraser (1970: 85), ***-ing of*** nominals, termed "Action Nominals" in Lees (1963 : 64), e.g. ***the reading of a book***, and gerundial nominals proper, e.g. ***reading a book***.

The analysis of the equivalence of same features of the above mentioned nominal structures in Polish and English is the subject of the present paper. The discussion will not be exhausted here (it is a subject of a more extensive study), it will signal only same properties of these constructions in both the languages.

Verbal substantives (S_{verb}) being a categorial type, are morphologically more uniform than deverbal substantives (S_{deverb}), and may be formed from almost all verbs in Polish (Puzynina 1969 : 28). A similar characteristics seems to be shared by the English ***-ing of*** and gerundial nominals, which, in the morphological sense, form one class of item. S_{deverb}, on the other hand, in English and Polish, are both formally and semantically non-categorial, having more varied types of derivational endings and formed from a smaller group of verbs. In this sense then, a certain analogy can be drawn between the Polish S_{verb} on the one hand, and English gerunds and *-ing of* nominals on the other, as well as between the English and Polish S_{deverb}. The Polish S_{verb} seem to combine the features of both English gerunds and *-ing of* nominals.

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Out of the number of possible interpretations of action nominalizations (cf. Fraser 1970: 84 - 85), we shall choose for our present discussion the opposition between the factive interpretation and that expressing the way in which a given action is performed.

Gerunds and *-ing of* nominals may be sometimes homophonous in English (Lees 1963: 64), so when the formal markers are lacking, numerous cases of ambiguity may occur. Since, however, a high correlation between factivity and gerundialization has been stated in English (the Kiparskys 1968; Stockwell 1968: 588 - 590), almost all *-ing* derivatives considered to be of gerundial type can be paraphrased by factive constructions:

(1) She did not approve of his painting[2]

The sentence may be disambiguated when followed by a subsidiary clause or when paraphrased:

(2) She did not approve of his painting as he was not very good at it.

equals in meaning:

(3) She did not approve of *the way* he painted as he was not very good at it

Another interpretation of (1) is also possible when completed with a different clause:

(4) She did not approve of his painting as he never had enough time to take her out to lunch

which can be paraphrased by:

(5) She did not approve of *the fact* that he painted as he never had enough time to take her out to lunch

The Polish language would employ either S_{deverb} or S_{verb} (corresponding in meaning to the paraphrase with *the way*) in the first case, while in the second one, S_{verb} corresponding to the "factive" paraphrase would be used:

(1a) Nie pochwalala jego malowania

may be expanded into either:

(2a) Nie pochwalala jego $\left\{\begin{matrix}\text{malowania}\\\text{malarstwa}\end{matrix}\right\}$, bo nie robił tego dobrze which, to the author of the present paper, means:

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[2] For the examples and their analysis consult Lees (1963 : 65 - 67). The possible interpretation of *painting as a painted picture* will be ignored in the present discussion.

(3a) Nie pochwalała *sposobu*, w jaki malował, bo nie robił tego dobrze

or:

(4a) Nie pochwalała jego malowania, gdyż nigdy nie miał dość czasu, by ją wziąć na obiad

which can be paraphrased as:

(5a) Nie pochwalała *faktu*, że malował, gdyż nigdy nie miał dość czasu, by ją wziąć na obiad

A separate class of gerund is lacking in Polish, but possible ambiguities of the type mentioned above are observed both within the class of S_{verb} and S_{deverb}:

(6) Twoje mówienie denerwuje mnie

(6a) Your talking gets on my nerves

The above sentences may denote either:

(7) *Fakt*, że mówisz denerwuje mnie

(7a) *The fact* that you are talking gets on my nerves

or:

(8) *Sposób*, w jaki mówisz denerwuje mnie

(8a) *The way* you are talking gets on my nerves

The class of S_{deverb} may also contain similar ambiguities:

(9) Jej wejście ściągnęło uwagę wszystkich

(9a) Her $\left\{\begin{matrix}\text{entrance}\\ \text{entering}\end{matrix}\right\}$ attracted everybody's attention

which may be interpreted either as:

(10) *Fakt*, że weszła ściągnął uwagę wszystkich

(10a) *The fact* that she entered attracted everybody's attention

or:

(11) Sposób, w jaki weszła ściągnął uwagę wszystkich

(11a) *The way* she entered attracted everybody's attention

If a verb can form both verbal and deverbal nominals, S_{deverb} is used in Polish more frequently to express the way in which a given action was performed, while S_{verb} — to indicate the fact that the action was performed (cf. Puzynina 1969 : 179):

(12) Podoba mi się jego *gra* (*sposób*, w jaki gra)

gra — S_{deverb}

(12) I like his *playing* (*the way* he plays)

(13) *Granie* w tej orkiestrze przynosi mi zaszczyt (*fakt*, że gram w tej orkiestrze)

granie — S_{verb}

(13a) *Playing* in this orchestra is an honour to me (*the fact* that I play in this orchestra)

The similar differentiation in English is not so obviously equivalent. While the class of S_{deverb} has rather the factive interpretation, the *-ing* class of nominals may be assigned the meanings of both ***the fact*** and ***the way***. In such case the *-ing* form with the factive interpretation is classified as a gerundial nominal (14), the other one (16) being considered an S_{verb}:

(14) Eating so much must cause a stomach-ache

(14a) Jedzenie w takiej ilości (tak dużo) musi spowodować ból żołądka

understood as:

(15) *The fact* that somebody eats so much must cause a stomach-ache

(15a) *Fakt*, że ktoś tak dużo je, musi spowodować ból żołądka

vs.

(16) His eating was disgusting

(16a) Jego jedzenie było odrażające

in the meaning of:

(17) *The way* he was eating was disgusting

(17a) *Sposób*, w jaki jadł był odrażający.

The next problem I would like to signal, refers to the categorial analysis of the action nominals. The most characteristic feature of these constructions seems to be their ability to retain some nominals categories on the one hand, and some of the verbal ones on the other. The discussion will be limited in this paper to the verbal characteristics.

The category of ***aspect*** is generally agreed to be present in Polish S_{verb}. Compare:

(18) podczas *czytania* tej książki

(18a) during the ***reading*** of the book

with

(19) po *przeczytaniu* tej książki

(19a) after ***having read*** the book

The ungrammaticality of:

(20) *podczas *przeczytania* tej książki

(20a) *during ***having read*** this book

and the acceptable phrase:

(21) po *czytaniu* tej książki

(21a) after ***reading*** the book

as compared with (18) and (19) show the perfective status of the nominal in (19) and the imperfective in (21)[3].

Similarly S_{deverb} in Polish can express the perfective-imperfective opposition, e.g. perf. ***strata*** (loss) vs. imperf. (or unmarked) ***budowa*** (construction).

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[3] Note that for English **during reading the book* is just as ungrammatical as (20a). The formal aspects of these Polish and English constructions will be examined in greater depth in one of the subsequent papers.

It has been noticed, however, (Puzynina 1969 : 86 - 94) that some S_{deverb} express the formal neutralization of the category of aspect, e.g., S_{deverb} ***kłamstwo*** may share the distribution of either imperf. (unmarked) S_{verb} ***kłamanie*** (lying):

(22) Tomek przywykł do $\left\{\begin{matrix} \textit{kłamstwa} \\ \textit{kłamania} \end{matrix}\right\}$

(22a) Tom got used to *lying*

or the perf. S_{verb} *sklamanie* (lying):

(23) Jego $\left\{\begin{matrix} \textit{kłamstwo} \\ \textit{skłamanie} \end{matrix}\right\}$ było dla mnie niespodzianką

(23a) His *having lied* was a surprise to me

(*kłamstwo* in the meaning of a product of lying, i.e. *a lie* is not considered here.)

The English S_{verb}, as can be seen from the above examples, do not transfer the perfective aspect of the Polish S_{verb} *skłamanie*, since they are not able to express the category of aspect. English gerunds, on the other hand, though can retain the auxiliary *have*, do not share all the distributional characteristics with the Polish S_{verb}, so cannot be used as direct equivalents in all the cases where the Polish language employs the nominals derived from the verbs marked for the perfective aspect.

In his transformational study of the English grammar, Stockwell (1968: 589) mentions a class of verbs, mostly non-factive, which are not compatible with the prefective gerunds. The equivalent verbs in Polish do not tolerate S_{verb} derived from the perfective verbs in the immediate context:

(24) He *continued reading* the book

(24a) *Kontynuował czytanie* książki

as opposed to the ungrammatical:

(25) *He *continued having read* the book

(25a) **Kontynuował przeczytanie* książki

Such English verbs as *stop*, *finish* and their Polish equivalents *(s)kończyć* seem to share the same feature.

The above observation would point at a certain equivalence between English perfective gerunds and Polish S_{verb} of perfective verbs, as well as these S_{deverb} which can be matched with the corresponding perfective verbs, e.g.,

(26) He *stopped building* the house

(26a) *Przerwał* $\left\{\begin{matrix} \textit{budowanie} \\ \textit{budowę} \end{matrix}\right\}$ tego domu

vs.

(27) *He *stopped having built* the house

(27a) **Przerwał zbudowanie* tego domu

Another characteristic feature expressed by verbs and derived nominals can be accounted for by taking into consideration what is usually called an "Aktionsart", denoting either a state or the way a given action is performed[4]. It is in fact a semantic category, marked morphologically in some cases, comprising a few subclasses of verbs, such as e.g.

a. durative — stressing the duration of an action:

(28) schnąć — schnięcie
(28a) to dry /to become dry — drying/ becoming dry

b. causative — referring to the cause of an action

(29) suszyć — suszenie
(29a) to dry /to make dry — drying/ making dry

c. momentary — denoting a single action

(30) kopnąć — kopnięcie
(30a) to kick — kicking (as a single act of kicking)

d. iterative — denoting a repeated action

(31) jadać — jadanie
(31a) to eat — eating (as a repeated action)

Some of the classes mentioned above have, as could be seen, separate morphemes in Polish, while the English language employs devices of a more analytical form (various auxiliary verbs). For some of these verbs and their nominals the finding of exact equivalents in English involves certain problems. The class of iterative verbal forms, for instance, is morphologically distinct in Polish, e.g.

(32) pisywać — pisywanie vs. pisać — pisanie
jadać — jadanie vs. jeść — jedzenie
chadzać — chadzanie vs. chodzić — chodzenie

where the first column comprises the iterative actions, while the second one is unmarked in this respect. The differentiation cannot be directly accounted for in English as the English equivalent forms are not marked for this feature, so they may determine both single and iterative actions, i.e., correspond to the second column in (32):

(32a) to write — writing
to eat — eating
to go — going

Another interesting class of verbs characteristic for the problem under consideration is a class exemplified in Polish by such verbs as (33) *dojadać-dojadanie* (S_{verb}), which is not distinct in the English verb system. The following semantic interpretations of the action expressed in (33) may be given:

(33a) 1. a single act of *eating*, not completed

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[4] In English the term *aspect* is used sometimes in this case (cf. Jespersen 1954 : 366, "inchoative or ingressive aspect"), nevertheless, to distinguish between the grammatical category of aspect and the morphological or purely semantic category of "Aktionsart", the latter term may prove to be more useful.

2. repeated acts of *eating*, not completed
3. repeated acts of *eating*, completed.

This class of verbs is formed in Polish by adding the perfective prefix *do-* or *z-* to the verb of the iterative group[5].

On the other hand, such grammatical category as that of the progressive aspect in English, generated regularly as *to be -ing* form for the English verbs, remains formally unmarked not only for the verbs in Polish but also for the derived nominals in both the languages:

(34) jeść — to eat/to be eating

(35) jedzenie — eating/*being eating

That is why the duration of an action will be expressed in both the languages by the durative form of an "Aktionsart" rather than the durative aspect in action nominals.

Verbal and deverbal substantives in English and Polish have ordinarily no *reference to time*. As Jespersen notices (1954 : 96) : "*on account of his coming* may be equal to 'because he comes' or 'because he came' or 'because he will come', according to the connexion in which it occurs". The corresponding Polish phrase:

(36) z powodu jego *przyjścia/przyjazdu*

does not imply any indication of time either. In order to establish these relations the English language has developed the gerundial forms which may express both the perfective aspect and a sequence of actions in a sentential string. In Polish and English S_{deverb} as well as S_{verb} and *-ing of* nominals respectively, this relative time, understood as a relation between the time of performing one action and that of another one, may be expressed only by a semantic interpretation of the verbs connoting particular nominals.

(37) I intend *writing* a book

(37a) Planuję (zamierzam) *napisanie* książki

refers to the future, while

(38) I remember *writing* the book

(38a) Pamiętam *pisanie* tej książki (że pisałem tę książkę)

refers to the past action only on account of the meaning of *intend* and *remember* (cf. Jespersen 1954 : 96). All the substantives in the examples quoted below may express the actions performed simultaneously or prior to the actions denoted in the predicate:

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[5] Since the class of non-iterative verbs is in fact unmarked in Polish, they often imply repeated actions as well. In this sense e.g., *chodzić-chodzenie* may be synonymous to *chadzać-chadzanie*. In the group mentioned here, then, represented by *dojadać*, the perfect. prefix may be sometimes added to non-iterative stems, which leads to the same effect: *dochodzić*, used more frequently than slightly awkward *dochadzać*. The similar substitution, though, does not work correctly in all cases: *dojeść*, for instance, is not equivalent to *dojadać* in this respect.

(39)

$$\text{John}\left\{\begin{array}{l}\text{did not like}\\ \text{does not like}\\ \text{will not like}\\ \ldots\end{array}\right\}\text{her reaction}$$

(39a)

$$\text{Jankowi}\left\{\begin{array}{l}\text{nie podobała się}\\ \text{nie podoba się}\\ \text{nie będzie podobać się}\\ \ldots\end{array}\right\}\text{jej reakcja}$$

The ambiguity may be sometimes eliminated in both the languages by including one of the appropriate adjectival or adverbial phrases, e.g.,

(40) John does not like her *present reaction*

(40a) Jankowi nie podoba się jej *obecna reakcja*

(40) and (40a) express the state of *liking* which is contemporary with the activity represented by *reaction*. Some other phrases may express futurity, e.g.,

(41) They were talking of the *future landing* on this planet

(41a) Rozmawiali o *przyszłym lądowaniu* na tej planecie

In order to refer to a past time, the English language may use the gerundial nominal in the perfective form, which is absent from the Polish nominal system, or one of the expressions implying the past, which have direct equivalents in Polish:

(42) John did not like her *having reacted* in this way

(43) John did not like her *then reaction* at that time

(43a) Jankowi nie podobała się jej *ówczesna reakcja*

In many examples quoted above the nominals were preceded by a possessive pronoun marking *the category of person*. The category of person is not directly present in S_{deverb}, S_{verb} or gerund in either of the languages. The possessive pronouns and partly Gen. Sg. and Pl. of nouns take this function and mark the category of person for Polish and English nominals. The difference between the two languages in this respect lies in the lower frequency of their usage in Polish. Let's compare the following examples (some of the Polish examples inspired by Puzynina 1969: 94 - 95):

(44) *I* am pleased with *my going* to France

which in Polish may be expressed in three ways:

(44a)

$$\text{Cieszę się}\left\{\begin{array}{l}\textit{z mojego}\\ \textit{ze swojego}\\ \textit{z }\mathit{0}\end{array}\right\}\textit{wyjazdu}\text{ do Francji}$$

vs.

(45) *I* am pleased with ***his going*** to France
which will find its Polish equivalent only in:

(45a) Cieszę się z *jego wyjazdu* do Francji
Another set of examples:

(46) ***Janek*** cieszy się $\left\{\begin{array}{l}\textit{ze swojego}\\ \textit{z Ø}\end{array}\right\}$ *wyjazdu* do Francji

where the possessive pronoun *jego* (3-rd person Sg. Masc.) could be also used, it would indicate, however, a different referent.

The English equivalent form:

(46a) ***John*** is pleased with ***his going*** to France
has the ambiguous pronoun ***his***, referring either to ***John*** or to another [+Masculine] noun,
vs.

(47) ***John*** is pleased with ***her going*** to France

(47a) ***Janek*** cieszy się z *jej wyjazdu* do Francji
allows no such ambiguity.

If, then, in Polish, a nominal and a noun in subject position refer to the identical referent, the possessive pronoun may be either neutralized to the form *swój* (or any of its morphological variants), or else totally deleted. Otherwise, the pronoun is obligatorily present. In English, on the other hand, the pronoun is most often obligatory, if the subject of the action is explicitly stated.

The same function of person marker may be fulfilled in both the languages by the Gen. case of nouns:

(48) Marię zdziwił *wyjazd Janka*

(48a) Mary was surprised with *John's departure*

The final remark in this paper will refer to the position of the nominal modifier in combinations with action nominals and will signal some remaining verbal properties of this kind of nominalization.

The English S_{verb} may be preceded by an adjective, while gerund- followed by an adverb, the opposite being ungrammatical. This behaviour points at a closer affinity of S_{verb} to substantives, and gerundives — to the corresponding verbs. S_{deverb}, on the other hand, may be only preceded by an adjective. The Polish S_{deverb} also tolerates only, similarly to the English one, the preceding adjective (cf. (49a) and (50a) with those from Lees 1963: 65). The Polish S_{verb} combines the features of the English S_{verb} and gerund, allowing either an adjective in the preceding position or an adverb in the following one.

(49) the *rapid painting* of the wall

(49a) *szybkie malowanie* ściany

(50) *painting the wall* rapidly

(50a) *malowanie ściany szybko*

S_{deverb} type:

(51) his *unusual flight*
(52) *his *flight unusually*
(51a) jego *niezwykły lot*
(52a) *jego *lot niezwykle*

Other verbal features of the Polish S_{verb} are: 1. the retention of the passive voice, which is characteristic of the English nominal of the gerundial type:

(53) the necessity of *loving* and *being loved* (quoted from De Quincey after Jespersen 1961 : 115)
(53a) potrzeba *kochania* i *bycia kochanym*

and 2. the preserving of the reflexive pronoun *się* in the Polish S_{verb} derived from the reflexive verbs (Damborský 1965: 154 - 157):

(54) całować *się* — całowanie *się*
(54a) to kiss (each other) — kissing (each other)

While, however, the verb in (54) must be complemented by *się* or some other object, the nominal in the reflexive meaning may delete *się* : ***ich całowanie***, if the subject is explicitly stated (*ich*). In English the phrase ***each other*** is optional in either case: ***they kissed*** (*each other*) — ***their kissing*** (*each other*).

As a final remark, it should be pointed out that all the sentences and phrases employing nominal forms may be expressed by the corresponding clausal structures, and though the sentential paraphrases were not given in all instances, it is obvious that all of them are the nominal equivalents of predicates expressed by finite forms of verbs. In both formal and semantic aspects, the verb is the primary, and the nominal — the secondary formant, nominal constructions, however, prove to be useful by providing a tool for introducing synonymous stylistic variants both in Polish and English.

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UNRELATED ACTIVE PARTICIPLES IN POLISH AND ENGLISH: A TRANSFORMATIONAL CONTRASTIVE STUDY

Maria Grala

Adam Mickiewicz University, Poznań

1.0 The present paper is a part of the author's doctoral dissertation devoted to active participles in Polish and English. The purpose of this paper is to contrast unrelated active participles in both languages. Contrasting is to be understood in this context as pointing out both the similarities and differences between the two languages.

The view of language in this analysis is rule oriented. The grammar of Polish and English is understood to consist of a set of rules which are ordered so that the progression is from the general to the specific. The semantically oriented base is related to sentences which in turn are the source of participial constructions. That is, our model of contrast has a levelled structure which goes from the deepest level through various intermediate levels to the surface level with strictly defined rules related to these levels. Differences between the two languages in question are already found in intermediate levels and increase as the surface level is approached. These differences, where possible, are explained by means of different rules that apply in Polish and English at various levels.

The deep structure is assumed to be common to Polish and English. In both languages participles are derived from sentences.

1.1 Regarding function, unrelated active participles belong to adverbial participle modifiers and denote the same relations in Polish and English, i.e.,

(a) Polish Present Adverbial Participles and English Present Adverbial Participles denote an action simultaneous with the action of the finite verb.

(b) Polish Past Adverbial Participles and English Perfect Participles denote an action prior to the action of the finite verb.

Regarding form, we distinguish in Polish (a) Present Adverbial Participles formed from the present tense stem of imperfective verbs with the present participial suffix *-ąc*, and (b) Past Adverbial Participles formed from the past tense stem of perfective verbs with the past participial suffix *-łszy/wszy*. The appropriate English adverbial participles are formed by adding the suffix *-ing* to the basic form of the verb. In the case of perfect participles the suffix *-ing* is added to *have* and followed by the past participial form of the appropriate verb.

1.2 Active participles functioning adverbially are divided into two main groups according to their relation to the subject: related and unrelated participles.

Unrelated participles do not modify any particular part of a sentence but rather a sentence as a whole. Furthermore, unrelated participles are always nonrestrictive while related participles may appear as both restrictive and nonrestrictive modifiers.

As far as their function is concerned, unrelated participles are further subdivided into three types: sentence adverbials, prepositions-conjunctions, and absolute participles.

The three types of unrelated participles share certain features, i.e., they are derived from nonrestrictive constituent sentences where NP constituent $\neq$ NP matrix. This feature makes them a distinct category from all the other active participles, as they all are derived from constituent sentences where NP constituent = NP matrix. Furthermore, sentence adverbials and prepositions-conjunctions are further related regarding their derivation and partly their function. Participles of these types pose a kind of condition over the whole matrix sentence. This condition appears in the deep structure in the form of a conditional clause of the type: If I may + VP (Zabrocki 1973).

2.0. There are various approaches to the nature and derivation of participles functioning as sentence adverbials. House (1965: 292) calls them independent participles because they do not modify any particular word in the sentence. Hornby (1961) describes them as unattached and not logically related to the subject of the verb. Greenbaum (1969) classifies sentence adverbials semantically and distinguishes: attitudinal adverbs concerned with the content of the communication (see also Schreiber 1969, modal and evaluative adverbs), and stylistic adverbs, to which our sentence adverbials belong, describing the manner in which the content of a sentence has been communicated. Chomsky (1965: 72) gives a phrase structure rule which contains an adverb functioning as a sentence modifier, but he neither names it a sentence adverbial nor discusses it.

$$S \rightarrow \text{Adverbial}^\frown \text{NP}^\frown \text{Aux}^\frown \text{VP}$$

(Naturally, John will leave.)

According to Chomsky's rule Adverbial is directly dominated by S. Chomsky's rule may be expanded as follows:

$$\text{Adverbial} \rightarrow \text{Sentence Adverbial}$$

In the case of a simple adverb it may replace Sentence Adverbial thus yielding:

$$\text{Sentence Adverbial} \rightarrow \text{Adverb}$$

In the case of a participial modifier functioning as a sentence adverbial a further expansion of the proposed rule would be required, namely:

$$\text{Sentence Adverbial} \rightarrow \begin{Bmatrix} \text{Adverb} \\ \text{(Adverb) Participle} \end{Bmatrix}$$

Because the class of participles functioning as sentence adverbials is not large and relatively closed one of the possibilities of accounting for their presence is to list them in the lexicon. Another possibility which would follow from the statement that all participles are derived from full clauses would be to postulate a similar structure underlying participial phrases of that type. If the latter alternative is selected, sentence participial adverbials may be derived from structures such as:

$$S \rightarrow S'S''$$

Polish:

$$S''' = \text{jeżeli } NP_2 \text{ móc } T\ V \text{ (adv)}$$

$$NP_2 = \text{ja}$$

English:

$$S''' = \text{if } NP_2 \text{ may } T \text{ BE Ving (adv)}$$

$$NP_2 = \text{I}$$

Examples:

P: On ma rację, jeżeli mogę mówić ogólnie.
E: He is right if I may be speaking generally.

The appropriate transformations delete NP_2, Aux and tense in Polish and, in addition to these, BE in English. In Polish the participial transformation generates the appropriate participial form of the verb. The generated participle appears as follows:

P: On ma rację, mówiąc ogólnie.
E: He is right, speaking generally.

If the adverb modifying a participle receives strong stress in the spoken language, it may follow the participle; otherwise it is pre-positioned and the whole adverbial phrase as a sentence modifier is usually shifted to the front of the whole construction.

In discussing the origin of sentence adverbials we follow Müller (1970) who draws a clear line between optional adverbial modifiers present in the base and those introduced transformationally. The latter include all participial modifiers functioning adverbially.

Participles functioning as sentence adverbials in Polish and English are closely related. Among the corresponding forms in both languages only these belonging to the equivalent group are found, though not always in the same form (on the definition of equivalents and counterparts cf. Grala 1972: 3). Among the equivalents of different form we find infinitives and idiomatic expressions, such as: *to tell the truth, not to mention, by the way*, etc. The most common participles in this function are:

POLISH		ENGLISH
biorąc pod uwagę wziąwszy pod uwagę	=	taking into consideration considering...
ogólnie mówiąc ogólnie biorąc ściśle mówiąc	=	generally speaking
ściśle biorąc praktycznie (rzecz) biorąc	=	strictly speaking
formalnie biorąc	=	formally speaking
sądząc po...	=	judging by...
mówiąc o...	=	talking of...

Participles of this kind may also be used as related participles, e.g.:

1. Tomek mówiąc prawdę wykazał dużo odwagi.
2. Wziąwszy to pod uwagę, Agnieszka nie pojechała do Warszawy.
3. The teacher, taking his behaviour into consideration, refused to let him in.

3.0 The second type of unrelated participles functions as prepositions and conjunctions. Poutsma (1926: 723) says: 'When a participle is followed by an object, it often partakes of the nature of a preposition, either by itself, or in connection with an adverbial adjunct'. It follows then that active participles functioning adverbially may always appear as related participles, of which a small number may also be used as prepositions (conjunctions): e.g.

4. Wyjąwszy dziecko z kołyski podeszła do pielęgniarki (related participle).
4a. Możemy przyjąć ich postulaty, wyjąwszy żądania podwyżki płac (preposition).
5. Touching his little hands she felt a sudden wave of warmth (related participle).

5a. The new laws touching marriage are excellent (preposition).

Unrelated participles, i.e.; those functioning as prepositions and conjunctions are known in both Polish and English although the same participles are not always used in the two languages in this way. The most common are:

POLISH		ENGLISH
pomijając wyjąwszy	=	excepting
odnosząc do	=	relating to
zakładając że przyjmując że przyjąwszy że	=	granting providing supposing

English seems to have more participles in this function for which we find Polish non-participial, adverbial equivalents, e.g.:

according to = zgodnie z, według, zależnie od
owing to = dzięki, wskutek, z powodu
concerning that
touching
regarding
= wobec, co do, co się tyczy, w sprawie, odnośnie

4.0 Absolute participles are alien to present-day Polish although they did exist in Old Polish. Absolute participles are derived similarly to nonrestrictive related participles (Grala 1972: 55). Schwartz (1968 : 764) points out the fact that the non-restrictve and absolute participles are structurally identical. They differ only in that the absolutes have their own subjects, i.e. $NP_{constituent} = NP_{matrix}$, which are not deleted in the surface structure. Two types of absolute participles are distinguished:

1. the Nominative Absolute Participles
2. the Prepositional Absolute Participles

The second type differs from the first in that it is accompanied by the preposition *with*. It mainly denotes attendant circumstance, while the Nominative Absolute Participle may denote various adverbial relations, attendant circumstance, cause, time and condition being the most frequent. The following examples illustrate the use of absolute participles in various adverbial relations:

6. He turned and went, we, as before, following him.
7. We were walking on again, with Peter remaining behind.
8. Circumstances permitting, we shall start together.

Absolute participial constructions are avoided in English as high literary style, and that is why this group is relatively rare. In Polish they are rendered by clauses, mostly equivalent adverbial clauses and counterpart paratactic (usually adversative) clauses. If the corresponding clauses denote time, equivalents may interchange with counterparts without affecting the meaning. The following examples illustrate the clause constructions corresponding to absolute participles:

9. Off we started, he remaining behind.

9a. Wyruszyliśmy, {a on pozostał w tyle.
podczas gdy on pozostał w tyle.

10. His fat delicate hands rested on the glass, the fingers moving like small, restless sausages. (JS)

10a. Jego pulchne, delikatne ręce spoczywały na szkle,
{a palce poruszały się jak małe niespokojne kiełbaski.
podczas gdy jego palce poruszały się jak małe niespokojne kiełbaski.

11. They were chattering gaily, with Hugo watching them intensely.

11a. Rozprawiali wesoło, {a Hugo obserwował ich uważnie.
podczas gdy Hugo obserwował ich uważnie.

12. Dora sat in a kind of throne, her orange hair flaming. (JS)

12a. Dora siedziała na czymś w rodzaju tronu, a jej pomarańczowe włosy płonęły.

13. 'What', said Nosy, with his eyes popping. (JC)

13a. —Co takiego? — pytał Nosal, a oczy wyłaziły mu na wierzch.

Apart from clauses we also find participles among the corresponding forms. They are mainly adverbial (A), but there are occasionally even adjectival participles (B). For example:

(A) 14. 'You must make yourself at home here', she said, her gaze following the moth. (GG)

14a —Proszę czuć się u nas jak w domu. — mówiła, nie odrywając wzroku od ćmy.

15. He jerked his head, his nostrils widening at the firing. (EH).
Targnął łbem, rozdymając chrapy na odgłos strzału.

(B) 16. Augustin was leaning against the tree, the automatic rifle jutting over the top of his load. (EH)

16a. Augustin stał oparty o drzewo, z lufą ręcznego karabinu maszynowego sterczącą nad workami.

17. They looked much alike and were both short, heavily built, dark haired, their hair growing low on their foreheads, dark-eyed, and brown. (EH)

17a. Bardzo do siebie podobni, niscy, krępi i smagli, mieli ciemne oczy i ciemne włosy zarastające nisko na czoło.

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EH	Ernest Hemingway
GG	Graham Greene
JC	Joyce Carry
JS	John Steinbeck

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SOME REMARKS ON THE SPATIO-RELATIVE SYSTEM IN ENGLISH AND POLISH

MARIA G. SYSAK-BOROŃSKA

University of Silesia, Katowice

All spatial relationships are those relationships which are held between some object that is talked about and some element of space that has been chosen as a point of reference. Information about spatial relationships necessarily consists of three types of information:

a) it indicates the object to which the function of a reference has been ascribed. This object will be called a localizer in accordance with the terminology employed by A. Weinsberg (1969 : 29) and B. Klebanowska (1971: 6);

b) it denotes the nature of the relation linking the object which is being localized with the localizer. For this A. Weinsberg (1968 : 29) has introduced the term of neighbourhood

c) it specifies whether or not the passing of time affects the distance between an object and a localizer.

On the basis of a speaker's relevant perceptual recognition of spatial relationships we assume that three kinds of semantic oppositions may arise in the system of spatial expressions in a given language. Accordingly, they arise because of

a) the variety of objects that may be isolated from the space as points of reference, i.e. localizers,
e.g. *the roof*: *the table*, in:
(1) Our cat is sitting on the roof.
Nasz kot siedzi na dachu.
(2) Our cat is sitting on the table.
Nasz kot siedzi na stole.

b) The nature of the neighbourhood
e.g. *under*: *in*, in:

(3) Our cat is mewing under the chestnut tree.
Nasz kot miauczy pod kasztanowcem.
(4) Our cat is mewing in the chestnut tree.
Nasz kot miauczy na kasztanowcu.

Sentence (3) localizes our cat in the space which is understood to be a patch of ground shadowed by the chestnut tree. Sentence (4) tells us that our cat is above the ground, at a height defined by the top and the bottom branches of the tree. In this part of information various concepts, geometrical in character as e.g. dimensions, contiguity, surface, point and line, are utilized to characterize the neighbourhood of the object. They are encoded in (and make up the semantic value of) the spatial constructions of a given language. Thus information about the shape of the localizer or its relevant part is sometimes implied in the constructions. The spatial constructions may also reveal whether the neighbourhood involves contact with a surface or with a point or whether the object is interior or exterior to a localizer. Moreover, the information included in the given type of spatial constructions may also specify the degree of immediacy of contact, or the position of an object in relation to a localizer in terms of plane and level, i.e. with the aid of concepts of vertical and horizontal positions.

Another semantic ingredient of spatial constructions concerns primarily their division into two kinds of situations: a spatial construction denoting (1) the location of a given object or (2) the direction of a given object when in motion, i.e. a *static* : *dynamic* contrast.

c) *Relative motion* observable in:

(5) Tom is going to school.
Tom idzie do szkoły.
(6) Tom is at school now.
Tom jest w szkole.

Spatial relationships seem to be more or less adequately expressed with respect to these three kinds of information. In each language locative constructions with underlying spatial relationships form a specific system determined by and dependent on the resources within the range of the formal means of a given language. The aim of the present paper is to characterize the two systems, i.e., to specify the extent to which the above mentioned semantic categories are expressed by syntactic exponents in Polish and English. The considerations will be confined to morphosemantic oppositions which result from the opposition within the two categories of *relative motion* and *dimensionality*. A few more words will be devoted to the nature of the categories used.

The application of a category of motion enables one to perceive two kinds of situations, the characters of which have already been mentioned before. In one case the distance between the object and its localizer changes, while in the other it is constant. Accordingly, the opposition *direction* : *location* or *dynamic* : *static* arises. In the former situation covered by the opposition, there are again two possibilities:

(1) The moving object is localized by indicating the point of its destination or goal.

(2) The moving object is characterized with respect to its location negatively, i.e. by the point of departure.

According to this division direction can be split up into two meanings: (1) adlative which may be defined as denoting the process of the decreasing of the distance between an object and its localizer; (2) ablative which expresses the process resulting in the increase of the distance between two objects. Further consideration of the second member of the opposition *direction*: *location* will lead us to recognize another possibility of the opposition, i.e., *locative* : *perlative*. The difference is illustrated by the following examples:

(7) Tom is sleeping in the forest.
Tom śpi w lesie.

(8) Tom is going through the forest.
Tom idzie przez las.

It seems as if the opposition *perlative* : *locative* was combined with a semantic opposition of verbal contexts — *motion* : *position*. But the next pair of examples points to a different line of division:

(9) Tom is walking in the forest.
Tom spaceruje w/po lesie.

(10) Tom is going through the forest.
Tom idzie przez las/lasem.

The perlative meaning presupposes the notion of a one-way-motion (destination of motion is implied here). Thus the *perlative* : *locative* opposition implies a semantic opposition of contextual verbs, *one-way motion* : *not one-way motion*. The application of this psychologically founded analysis within the category of relative motion leaves us with four basic meanings, *locative* : : *perlative* : *adlative* : *ablative*, the semantic essence of which is realized in four corresponding label-like pronouns, *where* : *which way* : *where to* : *where from* (gdzie : którędy : dokąd : skąd).

The category of dimensionality undeniably offers a greater choice of overlapping criteria to the linguist who challenges the attempt to classify grammatical units in regard to this category. Among the cirteria which have already been employed there are: the criterion of coherence and incoherence, of subjectivity and objectivity, of interiority and exteriority and the criterion of proximity. For the needs of the present paper the following criteria will be utilized to characterize the relationship between an object and its localizer:

(1) Criterion of proximity which sets the opposition of immediate : proximate contact. Within the first unit of this opposition another contrast is related, i.e. interior : exterior (to the localizer).

(2) Level and plane category to characterize vertical and horizontal relations
 a) higher than : neutral : lower than
 b) in front of : mid : behind.

(3) The criterion of dimension which gives the following opposition: 3 : 2 : 1 dimension.

The third criterion concerns the shape of the localizer or that part of a localizer which is significant to the spatial contact. This category as a matter of fact has more to do with the human apparatus of visual perception, i.e. the mental picture of an object reflected in the speaker's memory, than with the objective physical properties of objects. Thus the contact may be perceived as a relationship involving a point, line, a surface, or a volume.

The next part of this paper will review the formal means of expression in Polish and English with respect to the framework of the criteria already introduced. References to the second criterion of the dimensionality category (place and level) will be made only when one of the polar meanings is involved.

I

In English, besides context prepositional morphemes are the only available formal means of setting up oppositions between spatial constructions (prepositional phrases). The limitations of space and scope of the present article do not allow consideration of all the spatial prepositions; therefore, the present analysis will be confined to a discussion of only the following group of prepositions: *in, into, out of, from, to, at, on, off, onto, above, below, under, over, across, along, through, in front of, behind, by/beside*. Examples of their usage as illustrated in the enclosed class of sentences, are taken from grammar books and fiction.

(11) She sat rigidly in her seat.
 Siedziała sztywno na swoim miejscu.[1]

(12) At night ships carry a red light on the port side.
 W nocy statki mają czerwone światło na lewej burcie.

(13) David paused at the edge of the clearing.
 Dawid zatrzymał się na brzegu polany.

(14) Jane is standing by the door.
 Jane stoi koło drzwi.

(15) The family portraits hang over the fireplace.
 Portrety rodzinne wiszą nad kominkiem.

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[1] The Polish under English examples and the English under Polish examples is a literal translation rendered by the author and consulted with several native speakers of English.

(16) The swimmer keeps his head above water.
Pływak trzyma głowę nad wodą.

(17) Some of the land in Holland is actually below the sea level.
Część obszaru Holandii znajduje się poniżej poziomu morza.

(18) John is standing under an apple tree.
John stoi pod jabłonią.

(19) He got stuck behind the bus.
Stał zablokowany za autobusem.

(20) You'll find the newspaper in front of the house.
Znajdziesz gazetę przed domem.

(21) The Nile flows into the Mediterranean.
Nil wpływa do Morza Śródziemnego.

(22) Step onto the ladder (23) but be careful you don't fall off it.
Wejdź na drabinę, ale uważaj żebyś nie spadł.

(24) At last he came to the road.
Wreszcie dotarł do drogi.

(25) The moon is rising over a hill.
Księżyc wschodzi nad wzgórzem.

(26) Put the magazines on the shelf above the books.
Połóż pisma na półkę nad książkami.

(27) A diver is careful not to go below a certain depth.
Nurek uważa, aby nie zejść poniżej pewnej głębokości.

(28) Why don't you come under my umbrella?
Dlaczego nie wejdziesz pod mój parasol?

(29) Tom went behind the school to play football.
Tom poszedł za szkołę grać w piłkę.

(30) The children ran in front of the house.
Dzieci biegały przed domem.

(31) We are driving out of the city.
Wyjeżdżamy z miasta.

(32) They emerged at last from the dark avenue.
Wyłonili się w końcu z ciemnej alei.

(33) He heard some suspicious murmur coming from above his head.
Usłyszał jakiś podejrzany pomruk dochodzący z nad głowy.

(34) He crawled out from under the bush.
Wyczołgał się spod krzaka.

(35) This voice came from over a barricade.
Ten głos przyszedł zza barykady.

(36) He appeared suddenly from behind Tom's back.
Pojawił się nagle zza pleców Toma.

(37) He hurried from in front of the house to the garden at the back.
Pospieszył sprzed domu do ogrodu z tyłu domu.

(38) John jumped over a fence.
Janek przeskoczył przez płot.
(39) They were going along the path by/beside the river.
Szli ścieżką wzdłuż rzeki.
(40) They drove through the country.
Jechali przez wiejską okolicę.
(41) Bobby ran across the farmyard.
Bobby pobiegła przez podwórze.
(42) They went to Bristol via Tewkesbury.
Pojechali do Brystolu przez Tewkesbury.

A brief scrutiny of the data indicates to us that the prepositions fall into four semantically contrasting groups which correspond to the category of relative motion, perhaps the most demonstrative with respect to the semantic content of the sentences. Thus *in* (11), *on* (12), *at* (13), *behind* (19), *in front of* (20), *by/beside* (14), *over* (15), *above* (16), *below* (17), and *under* (18) form a class of locative prepositions.

Into (21), *onto* (22), *to* (24), *above* (26), *below* (27), *under* (28), *over* (25), *behind* (29), *in front of* (30) appear in adlative constructions. Ablative meaning is expressed by *off* (23), *out of* (31), *from* (32), *from behind* (36), *from above* (33), *from over* (35), *from under* (34), *from in front of* (30).

Across (41), *along* (39), *through* (40), *over* (38), *by/beside* (39), *via* (42) express perlative meaning.

The members of these four groups form a network of dimensional characteristics; each of the prepositions occupies a certain position in the intricate structure of dimensional concepts. The category of dimension and proximity overlapping with the criterion of interiority (or inessiveness) appears to be the most universal and pervading in each of the groups of prepositions.

The following table shows how these critera overlap in the exponents of adlative, ablative and locative meanings.

	Immediate			Proximate
	Interior	Exterior		
	Volume	Surface	Point/Line	
L	in	on	at	by/beside
Ad	into	onto	to	
Ab	out of	off	from	
P	through	across	along (via)	by/beside

Polar meanings of the plane category are borne by *in front of* : *behind*, *from in front of* : *from behind*.

Polar meanings of the level category are carried out by:

on : *under*
over : *under*
above : *below*
from : *from below*
from over : *from under*.

A quick comparison of the effects of this classification encourages one to draw the conclusion that English prepositions are to a much greater extent the explicit carriers of the category of dimensionality than the category of direction (relative motion). In the system of directional constructions only ablative prepositions contrast at all points with locative and adlative morphemes. This opposition is best seen in the case of prepositions denoting polar meanings of vertical and horizontal relations where compound morphemes are used: *from above*, *from below*, etc. Ablative direction is conveyed by an individual subcomponent *from* which thus may be recognized as a regular exponent of the ablative meaning. In the case of prepositions expressing movement from the surface or from inside a volume no individual exponent of the category of direction can be seen. *Off* and *out of* are examples of a combination of two functions expressing both the category of dimensionality and the category of direction. There may be some doubt about the equivalence of *from* and *at* in terms of dimensionality. Similar doubts may arise in the case of *to* as the adlative equivalent of *at*. The range of application of *to* and *from* is in fact much wider than that of *at*. "This can be attributed to the distancing effect of regarding a place as a destination rather than a position", according to Leech (1970: 193). In other words, besides the cases when *to* and *from* occur in an equivalent function to *at*, they function merely as the indicators of direction and are devoid of any notion of dimensionality. Since in the present article the compound prepositions, e.g. *from behind*, *from below*, are treated as one morpheme and there is no question of neutralization except for one point (*by* /*beside*) in the ablative framework of the category of dimension, the background for the comparison is set up by the locative set of prepositions for they reflect the structure of the dimensional criteria most fully.

The opposition between the adlative and the locative meanings is only fragmentary. Practically at all points of the dimensional structure, except for exponents of immediate contact *into* : *onto* : *to*, there occurs a neutralization of the adlative meaning. Analogous to *from* in the ablative meaning, *to* plays the role of the carrier of the adlative meaning. In the remaning number of cases the contrast of directional meanings and the locative nature of prepositions (conveying information in terms of plane and level) may be signalled solely by the verbal context of spatial constructions, e.g.,

(42) I'm under the umbrella.
Stoję pod parasolem.

(43) Why don't you come under it too?
Wejdź także pod mój parasol.

or

(44) The portraits hang over our fireplace.
Portrety wiszą nad kominkiem.

(45) Hang the portraits over the fireplace.
Powieś portrety nad kominek (kominkiem).

Notice that in (44) and (45) we are dealing with two different verbs: *hang* in (45) is the causative verb denoting movement, while *hang* in (44) denotes the position caused by this movement. Thus the ambiguity of the following example is a function of a systemic neutralization of directional opposition.

(47) We are running behind the barn.
Biegniemy za stodołę.

or

Biegamy za stodołą.

The sense of this sentence can be explained either as:

(47a) We are on the way to the ground behind the barn.

or as:

(47b) We are playing on the ground behind the barn.

Adlative constructions occur in the context of verbs which denote one-way motion. So when the verb of a given sentence is unmarked for this feature, ambiguities arise. Weak individuation of the adlative system results in the reduction of the dimensional correspondences within it. If we assume *to* to be the exponent of adlativity, we are left with three adlative prepositions: *onto*, *into*, *to* (corresponding to *at*) which are marked for the category of proximity and differentiated among themselves by the criterion of dimension.

Prepositions which on a semantic basis have tentatively been ascribed the function of denoting the perlative meaning in 38 - 42, cause the most trouble in the classification. They form the most heterogeneous group with respect to the semantic and syntagmatic properties they reveal. The perlative class includes *along*, *across*, *through*, *via*, *by/beside*, but also *over*, *under*, *in front of* in:

(48) The ball rolled under the hedge (Leech 1970 : 197).
Piłka potoczyła się pod żywopłot.

or

Piłka toczyła się pod żywopłotem.

(49) We were flying over far-stretching marshes.
Lecieliśmy nad rozległymi moczarami.

or

Lecieliśmy nad rozległe moczary.

(50) They marched in front of the barracks (Leech 1970 : 197).
Maszerowali przed koszarami.

or

Maszerowali przed koszary.

Of this group only *via* is a morpheme which definitely rejects the static verb context in contradistinction to *across, through, along* (not to mention *over, under, in front of* which have been previously discussed in their locative usage) which can be found in such sentences as the following:

(51) The post office is across the street.
Poczta znajduje się po drugiej stronie ulicy.
(52) The castle is through the forest.
Zamek jest po drugiej stronie lasu.
(53) The office is along the corridor.
Biuro mieści się dalej w korytarzu.

while

(54) **They are via Tewkesbury*, is grammatically incorrect.

This might lead to the conclusion that perhaps the prepositions in 51 - 54 belong with the same class as *in front of, behind, under, above, by beside*. But this suggestion is untenable in view of the fact that *across, through* and *along* in 48 - 49 denote a position which is the result of motion to a certain point and the character of which is defined by the preposition in question. They differ from the prepositions primarily denoting locative meaning, in that they bear the implication of motion encoded in their meaning, while the latter are devoid of any such connotations. It seems that the locative usage of *across, through* and *along* is the consequence of ellipsis, cf.

(51) The post office is across the street.
Poczta jest po drugiej stronie ulicy.

in fact means:

(51a) Go across the street and the post office is there.

The same holds true for *through* and *along* in (52) and (53) respectively. It should not be overlooked that the prepositional phrase *across the street* in (51a) allows an adlative interpretation (it can be substituted for *there* used in the adlative sense). Compare also the following set of examples:

(55) John went across the street.
Jan przeszedł przez ulicę.
(55a) John went across the street to the shop.
Jan przeszedł przez ulicę do sklepu.
(55b) John went along the path not across the lawn.
Jan poszedł ścieżką a nie trawnikiem.

Although the verbal context in all three sentences is identical, *across* permits adlative interpretation only in (55). In (55a) where its meaning is restricted by the co-occurrence of an adlative expression and in (55b) where it appears as the semantic equivalent of another perlative expression, its perlative character does not give rise to any doubts. The same property is revealed by *through* and *over* in:

(56) He went through the woods.
Poszedł przez las.
(38) Tom jumped over the fence.
Tom prze/skoczył przez płot.

Sentences (56) and (38) are ambiguous in the sense that the opposition *perlative* : *adlative* seems to have been obliterated in them. The question arises whether the phenomenon illustrated by the above sentences (56, 38) does not resemble the ambiguity inherent in the following sentences:

(48) The ball rolled under the hedge.
(57) John went by/beside a sign-post not looking at it.
Janek przeszedł obok kierunkowskazu nie patrząc nań.
Janek podszedł do kierunkowskazu nie patrząc nań.
(58) The boys ran behind the house.
Chłopcy pobiegli za dom.
Chłopcy biegali za domem.
(50) They marched in front of the barracks.
Maszerowali przed koszarami.
Maszerowali przed koszary.

In the case of (58) and (50), in which the verbs are unmarked for one-way motion, the spatial constructions permit three readings and can be labelled by any of the interrogative pronouns *where* : *which way* : *where to*. In reconsidering two sets of sentences, (56, 38) and (48, 57, 58, 50), a very important distinction therein must not be missed, i.e., the perlative meaning rendered by the latter group of prepositions is in complementary distribution with the adlative interpretation. Sentences 48, 57, 58, 50 allow only one of two plausible interpretations at one time, whereas the former set of prepositions *across* (55), *through* (56), and *over* (38) expresses perlative and adlative meanings simultaneously. Another fact which deserves attention is that neither *via* nor *along* in the context of a dynamic verb leaves any doubt concerning their perlative character. Accordingly, the comparison of the semantic value of *along* and *across* promises to be quite revealing. The opposition is demonstrated by the following pairs of sentences:

(55) John went across the street.
Jan przeszedł przez ulicę.
(59) John went along the street.
Jan szedł ulicą.

The opposition *across* : *along* necessitates the introduction of a new notion into the category of dimensionality, i.e. the notion of parallelism and criss-crossing. In the case of a noun denoting a one-dimensional localizer *along* and *across* realize two alternate relations of a localized object to the horizontal axis, parallel and criss-crossing. In the case of a noun denoting a two- or three-dimensional localizer, the choice between *across* and *along* is dependent on the shape of the localizer which determines the direction of the horizontal axis (Leech 1970 : 185).

The essential task of a perlative expression is to define the object on its way to some goal. The different character of *across* compared with *along* lies in its implication of two points. *Along* characterizes the motion of a localized object not with respect to the 2 points of the way it covers but the actual location of a process visualized as a line between those points. Due to this implication of a point of departure and a point of arrival (goal) inherent in the semantic content of *across*, its perlative meaning frequently turns into an adlative one whenever the speaker's /listener's intention stresses the goal of movement as significant for information. It is clear now that the element which differentiates the perlative — such as the morphemes *through*, *across*, *over* from the adlative, is the co-existence of ablative information side by side with adlative one inherent in the members of the former group, e.g.,

(55) *John went across the street*, requires the following explanation:

(55c) John went from one side of the street to the other side of the street[3].

In the light of the present discussion on perlative prepositions the claim about the *quadri-partite* character of the English spatio-relative system is not unfounded. At least this claim can be justified by the unambiguous character of *via* which contrasts with locative and ablative constructions as illustrated below:

$$\text{They}\ \begin{array}{l}\text{are}\\ \text{go}\\ \\ \\ \end{array}\ \left.\begin{array}{l}\text{at}\\ \left\{\begin{array}{l}\text{to}\\ \text{from}\\ \text{via}\end{array}\right.\end{array}\right\}\ \text{Tewkesbury}$$

Undoubtedly *via* analogous to *to* and *from* functions as the exponent of a relative motion category. The existence of an opposing class of perlative morphemes is accordingly possible to sustain. It is interesting to note that the nominal distributions of *via*, *across*, *along* and *through* reveal considerable parallelism to the distribution of *at*, *on*, and *in* respectively, as well as *to*,

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[3] The final remarks on the nature of *across*, *through* and *over* invite the hypotheses that maybe English prepositions, articulations of adlative and perlative meanings can be well envisaged as a continuum of meaning in which a clear-cut borderline between the perlative and the adlative is difficult to delineate since there are cases in which it runs across the morphological units *across*, *through*, *over*.

onto, *into* or *from*, *off* and *out of* within the framework of locative, adlative and ablative relations[3].

(60) They are in the woods.
Są w lesie.
(60a) They went through the woods.
Poszli przez las.
(61) They are on the road.
Są na drodze.
(61a) They went across/along the road.
Przeszli przez drogę/Poszli drogą.
(62) They are at Tewkesbury.
Są w Tewkesbury.
(62a) They go via Tewkesbury.
Przejeżdżają przez Tewkesbury.

From this juxtaposition there follows the conclusion that the perlative system coincides with the category of dimension, but that it undergoes complete neutralization within the spheres of the other dimensionality categories which coincide within the framework of the locative system. In all the perlative instances discussed the category of relative motion and the category of dimensionality co-occur and are expressed by one single morpheme representing thereby an accumulation of functions. The perlative class of prepositions lacks a morpheme such as *from* or *to* in the ablative and adlative classes respectively, which would function as the formative of the perlative meaning in combination with other morphemes, exponents of dimensionality. This shortcoming is responsible for the failure to recognize the perlative meaning as the fourth component of the English category of relative motion.

II

The second part of this paper is devoted to the problem of how Polish expressions of location express two general semantic categories: dimensionality and relative motion. It will start with a projection of the exponents of the relative motion category as opposed to the field of dimensional relations. Several illustrative examples are necessary in order to provide material for the discussion.

(1) Pociąg zatrzymał się w Nairobi.
The train stopped in Nairobi.
(2) Na wieży ratuszowej był kiedyś blaszany kurek.
On the Town Hall tower there was once a tin weather-vane.
(3) Przy stole siedział ktoś tak niespodziewany.
They were surprised to see somebody sitting at the table.

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[3] It is possible to view the perlative set of morphemes as consisting of two subsets, differentiated with respect to their semantic complexity:
(1) Perlative proper sub-set, including *via* and *along*
(2) The subset of perlative derivatives, in the case where the perlative meaning is the effect of a condensation of ablative and adlative information.

(4) Widzimy go tutaj jak stoi na moście pochylony nad wodą.
Here we see him standing on the bridge leaning over the water.
(5) Codziennie przechodził koło starego wiatraka.
Every day he passed by the old windmill.
(6) Pod ławką znaleźli gotowaną słoninę i chleb.
Under a bench they found some salt bacon and the bread.
(7) Piękny widok na dolinę rozciągał się za zakrętem.
A beautiful view of the valley stretched round the bend.
(8) Dzieci bawiły się przed domem od godziny.
The children were playing in front of the house for an hour.
(9) U ciotki zabawił godzinę, może dwie.
He stayed an hour at his aunt's place, perhaps two.
(10) Rzucił się do okna.
He rushed to the window.
(11) Nad rzekę chodzono zwykle o zmierzchu.
They usually went at dusk to the river.
(12) Na wszelki wypadek zaglądnął pod łóżko.
He looked under the bed just in case.
(13) Ogromna limuzyna zajechała przed stację.
A large limousine drove up in front of the station.
(14) W niedzielę wyjeżdżali za miasto.
On Sunday they usually went out of town.
(15) Z daleka od białej wieżyczki kościoła doleciał dźwięk dzwonu.
From the distance came the sound of a bell from the small white tower of the church.
(16) Wyjechali nareszcie z lasów.
At last they came out of the woods.
(17) Na zewnątrz, sprzed piwnicy, dolatywały niewyraźne okrzyki strzelców.
Outside from in front of the basement came the faint cries of the shooters.
(18) Patrzył surowo spod zmarszczonych brwi.
He looked severely from under his wrinkled brows.
(19) Znad półek dobiegł go podejrzany szelest.
He heard a suspicious rustle from above the shelves.
(20) Zza rogu wyskoczył motocykl.
A motor-cycle dashed from around the corner.
(21) Idzie żołnierz polem, lasem.
A soldier goes across the field and through the woods.
(22) Szli przez pola pełne słońca.
They were walking across the fields in the sun.

(23) Szedł po rozgrzanym słońcem chodniku.
He went along the pavement which was heated by the sun.
(24) Podróżni przechodzili koło kuźni.
The travellers passed by the forge.
(25) Nad miastem płyną chmury.
Clouds are floating over the town.
(26) Szli pod dachem z gałęzi.
They were walking under a roof made of branches.

The above sentences fall into four semantically opposing groups (each of them designated by one of the four interrogative pronouns: *where* : *where to* : *where from* : *which way*) and exemplifying the four groups of locative (1 - 9), adlative (10 - 14), ablative (15 - 20), and perlative (21 - 26) constructions. Even a very casual glance at the examples given reveals that in Polish both prepositions and inflexional endings play certain function in setting up morphosemantic oppositions. It is assumed that prepositions and inflexional endings do not differ functionally; they are exponents of spatial relations in the sentence. But this brings us to the problem of whether the components of preposition + inflexional ending should be kept apart and analyzed independently as autonomous linguistic units, or should they be treated as one functional unit. This problem was dealt with by J. Kuryłowicz (1960) in his "Le problème du classement des cas". The present approach will be based on the Kuryłowicz's statement that a preposition implies the case ending, and this implication has a purely formal character[4]. One of the consequences resulting from the adoption of this point of view is the rejection of a semantic equivalence of e.g. *pod* (under) in the two following combinations:

pod dom — Ø *pod* + acc
pod domem *pod* + instr

The present approach has the advantage over the one adopted by A. Weinsberg (1968) in that it ensures the possibility of comparing exponents consisting of two components: preposition + inflexional ending with exponents consisting of one morpheme only and their treatment as two functionally equivalent units.

The above remarks should not be interpreted as an assertion that there is no point in trying to distinguish parts of meanings whose exponents are the subcomponents of the whole combination, and which will be referred to as submorphemes[5].

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[4] Il en suit (...) que la préposition n'est pas le regens de la forme casuelle, mais, qu'elle est un sous-morphème, bien que principal, du morpheme, composé II (consistant de préposition + désinence casuelle). Ce qu'elle régit ou plutôt implique c'est donc uniquement la désinence casuelle et non pas le cas (la forme casuelle) (Kuryłowicz 1960 : 134).

[5] Sous-morpheme — the term suggested by J. Kuryłowicz (1960 : 134).

This consideration will be analysed in the present paper. This study was suggested by S. Karolak's considerations on cases and prepositions in which the author asserts that in some cases there exists a bilateral disjunction of morphemes consisting of a preposition and an inflexional ending (Karolak 1966 : 87).

The sentences expressing locative, adlative, and ablative meanings contain the following sets of morphemes:

$$\left.\begin{array}{l}\text{w}\\ \text{na}\\ \text{przy}\end{array}\right\}+\text{loc}\qquad \left.\begin{array}{l}\text{do}\\ \text{koło}\end{array}\right\}+\text{gen}\qquad \left.\begin{array}{l}\text{z}\\ \text{od}\end{array}\right\}+\text{gen}$$

$$\left.\begin{array}{l}\text{koło}\\ \text{u}\end{array}\right\}+\text{gen}\qquad \left.\begin{array}{l}\text{nad}\\ \text{pod}\\ \text{przed}\\ \text{za}\end{array}\right\}+\text{acc}\qquad \left.\begin{array}{ll}\text{znad} & (\text{z}+\text{nad})\\ \text{spod} & (\text{z}+\text{pod})\\ \text{sprzed} & (\text{z}+\text{przed})\\ \text{zza} & (\text{z}+\text{za})\end{array}\right\}+\text{gen}$$

$$\left.\begin{array}{l}\text{nad}\\ \text{pod}\\ \text{przed}\\ \text{za}\end{array}\right\}+\text{instr}$$

The sets of morphemes are far from being homogeneous. On the one hand, certain submorphemes occur in more than one group; on the other hand, there are certain submorphemes whose occurrence is confined to only one group. In each group there is a sequence of four morphemes which contrast their inflexional subcomponents with respect to the corresponding morphemes of the two other sets, i.e.,

$$\left.\begin{array}{l}\text{nad}\\ \text{pod}\\ \text{przed}\\ \text{za}\end{array}\right\}+\text{instr}\qquad \left.\begin{array}{l}\text{nad}\\ \text{pod}\\ \text{przed}\\ \text{za}\end{array}\right\}+\text{acc}\qquad \left.\begin{array}{l}\text{znad}\\ \text{spod}\\ \text{sprzed}\\ \text{zza}\end{array}\right\}+\text{gen}$$

It seems that in the case of these four morphemes the inflexional endings may be responsible for the opposition *locative* : *adlative* : *ablative* ; thus instrumental is the indicator of locativeness, accusative of adlative meaning, and genitive presumably expresses ablative meaning. It should be noted, however, that in the case of the ablative morphemes, which consist of three submorphemes, the contrast with locative and adlative meanings is indicated also by means of a prepositional subcomponent *z*. This element, common to the corresponding morphemes within each group, is actually a prepositional submorpheme — the exponent of dimensionality, it would seem. *Nad* (over), *pod* (under), *przed* (in front of), *za* (behind) express horizontal and vertical relationships and are thus marked for the plane and level category. Locative meaning can also be expressed by

$$\left.\begin{matrix}\text{w}\\ \text{na}\\ \text{przy}\end{matrix}\right\}+\text{loc} \quad \text{and} \quad \left.\begin{matrix}\text{koło}\\ \text{u}\end{matrix}\right\}+\text{gen.}$$

If the inflectional ending is used as a formal criterion for division, the set of locative morphemes splits into three subsets. These groups coincide with the resultant division of locative morphemes based on the application of the semantic criterion of dimensionality. So, accordingly, the first and second groups taken together (*w/na/przy+loc* and *kolo/u+gen*) differ from the third in that the latter is marked for the plane and level category whereas the first and second subclasses are on the two poles of a proximity category in such a way that *w/na/przy+loc* denotes immediate contact[6], while ***kolo/u+gen*** expresses proximate relation. In other words, both ***kolo/u+gen*** and ***przed/za/nad/pod +instr*** express proximate contact in contradistinction to ***w/na/przy+loc*** which denotes immediacy of contact, tangency.

The relations expressed by *kolo/u+gen* and ***przed/za/nad/pod+instr*** contrast by the degree of definiteness. ***Przed/za/pod/nad+instr***, unlike ***kolo/u +gen*** imply contact which is proximate but specified (in terms of plane and level). It is worth noting that *kolo+gen* may in some cases, where the specification of the kind of proximity is irrelevant, be substituted with ***za/przed+instr*** and on some rare occasions with *nad+ instr*(greater restrictions being imposed by situational context), e.g.

(27) Dzieci bawiły się za/przed domem.
The children played behind/in front of the house.
(27a) Dzieci bawiły się koło domu.
The children played beside the house.
(28) Samolot przeleciał nad naszym domem.
A plane flew over our house.
(28a) Samolot przeleciał koło domu.
A plane flew by near our house.

Similarly ***u+gen*** expresses a relation which can otherwise be paraphrased by 'within the reach of...' or 'in the sphere of...'. The localizer in this expression reveals itself as a complex formation — the centre and its vicinity — but considered as a whole, e.g.,

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[6] In fact, *przy+loc* in numerous cases appears to be synonymous with *kolo+gen*, i. e., it expresses a relation which is proximate, not immediate, but in these constructions the localizer evokes the impression of being relatively (in relation to the localized object) bigger in size or functionally important e. g. *przy maszynie* (at the machine), if compared with the localizer which is denoted by a noun in the latter construction, i.e. *kolo+gen* (cf. Klebanowska 1971 : 57 - 58).

u ciotki at my aunt's place	means: *in the place the centre (soul) of which is my aunt*
u progu at the doorstep	means *in close proximity to the doorstep*
u pasa at the belt/waist	means: *close to the belt/waist* and the belt is the centre of the space in which there is a localized object

The two latter examples do not exclude tangency with the centre of a localizer, but the stress is on its location (pointing to the outside of the centre of a localizer).

It appears that the irregularities manifesting themselves in the inflexional endings — the subcomponents of locative morphemes — reflect the internal division into appropriate categories within the structure of dimensionality.

It is interesting to see whether the analogous phenomenon is revealed within two other classes of morphemes — adlative and ablative. Let us compare:

Siedzę	w pokoju	Idę	do pokoju
I am sitting	in the room	I am going	into the room
	na fotelu		do fotela
	in the armchair		to the armchair
	przy lustrze		do lustra
	at the mirror		to the mirror
	koło domu		do domu
	by the house		to the house
	u ciotki		do ciotki
	at my aunt's		to my aunt's place

The above juxtaposition shows that five locative morphemes marked for proximity are substituted by one adlative morpheme: *do+gen*.

Now compare the first set of expressions, locative, with ablative correspondences.

Wracam	z pokoju
I am returning	out of my room
	z fotela
	from the armchair
	od lustra
	from the mirror
	od drogowskazu
	from the signpost

od ciotki
from my aunt's place.

In the case of the carriers of ablative meaning the same five locative morphemes get reduced to two: *od+gen* and *z+gen*. What happens is the neutralization of the dimensional category of proximity and dimension in adlative, and category of dimension in ablative constructions quoted above. In the ablative class there is an opposition of *z+gen* and *od+gen* which probably reflects the semantic opposition of ***immediate definite*: *proximate***, but not the opposition of ***dimension***. When speaking about adlative constructions one should not forget about the co-existence of the following pairs of expressions: 29 and 29a, 30 and 30a:

(29) Wszystko pakowano od razu w skrzynie i walizy.
Everything was being packed at once into boxes and suitcases.
(29a) Wszystko pakowano od razu do skrzyń i waliz.
Everything was being packed at once into the boxes and suitcases.
(30) Skoczył w pobliskie krzewy.
He jumped into the nearby bushes.
(30a) Podszedł do pobliskich krzewów.
He went to the nearby bushes.

Or:

(31) Dotarliśmy na granicę.
We came to the frontier.
(31a) Dotarliśmy do granicy.
We came to the frontier (we reached the frontier).
(32) Załadowali bagaże na wózek.
They loaded the luggage onto the cart.
(32a) Załadowali bagaże do wózka.
They loaded the luggage into the cart.

Examples (29a), (30a), (31a) and (32a) when considered together with (29), (30), (31) and (32) show that *do+gen* in comparison with *na+acc* and *w+acc* is more general and representative in expressing adlative sense. This comparison invites the inference that *do+gen* is the exponent of a solely directional aspect. When the dimension of a localizer becomes relevant for the information, it is substituted by an adlative morpheme corresponding to the locative appropriate morpheme and is marked for dimension:

(33) Jesteśmy w lesie.
We are in the woods.
(33a) Idziemy w las.
We are going into the woods.
(34) Siedzimy na ławce.
We are sitting on a bench.

(34a) Idziemy na ławkę.
We are going to sit on a bench.

$$\left.\begin{array}{l}\text{w}\\\text{na}\end{array}\right\}+\text{loc}\quad\text{are opposed to}\quad\left.\begin{array}{l}\text{w}\\\text{na}\end{array}\right\}+\text{acc}$$

The inflexional ending takes over the function of representing the directional aspect just as in the case of the five prepositions mentioned at the beginning of the present analysis.

Within the class of adlative constructions two kinds of morphemes contrast with respect to their submorphemes: *prep+gen* : *prep+acc*. All morphemes following the *prep+acc* pattern denote relations both immediate (*na/w+acc*) and proximate (*nad/pod/przed/za+acc*), but both degrees of proximity are specified in character. It looks as if *prep+gen* i.e. *do+gen* is reserved for describing relations which are immediate but unspecified in character[7].

As far as the class of ablative morphemes is concerned, the situation is somewhat different. The case submorphemes seem to be a matter of a purely formal implication determined by the ablative submorpheme *z*. The ablative morphemes acquire three forms which contrast with each other: *z+ Ø+gen* : : *z+prep+gen* : *od+gen*, where first two parts of the opposition represent a semantic opposition *immediate specified* : *proximate specified*; whereas *z+prep/Ø+gen* : *od+gen* contrast with respect to *presence* : *lack of specification of immediacy/proximity of contact*. The function of the genitive submorpheme here as well as within adlative morphemes seems to be confined to the indication of directional meaning. If the consideration of *prep+gen* is extended to the members of locative class *koło/u+gen* this statement demands further generalization and amendment, namely that the genitive submorpheme signals a lack of semantic structural complexity with respect to the dimensionality category but in the case of ablative morphemes its function cannot be considered anything more than redundant in all instances of morphemes consisting of the three subcomponents.

Perlative meaning is inherent in the following constructions:

(21) polem lasem
(22) przez pola
(23) po chodniku
(24) koło kuźni
(25) nad miastem
(26) pod dachem

This perlative meaning is rendered by the following morphemes:

(21) instr

---

[7] *Do+gen* implies the eventual tangency (in the effect of the process of approaching) with the goal-localizer.

(22) przez+acc
(23) po+loc
(24) koło+gen
(25) nad}
(26) pod} +instr

At the same time note that constructions (22) and (23) are both synonymous with (21), i.e., *po+loc* and *przez+acc* can be replaced by *instr*. The relation which holds between (22) and (21) as well as between (23) and (21) seems to be weak synonymy though (22) and (23) cannot be replaced by one another as in the following examples:

(35)	Idę I'm walking	po trawie across the grass	(35a)	Idę	trawą
(36)		po chodniku along the sidewalk	(36a)		chodnikiem
(37)		przez pole across the field	(37a)		polem
(38)		przez tunel through the tunnel	(38a)		tunelem

It looks as if the choice of morphemes *po+loc* or *przez+acc* is determined by the semantic character of the noun, or rather by the connotation it evokes in the speaker's mind. The relation of *instr* to *przez+acc* and *po+loc* resembles that of *do+gen* to *na+acc* and *w+acc*. *Przez+acc* precedes nouns which evoke an impresion of volumes or areas, whereas *po+loc* is followed by nouns creating associations of line or surface. But the examples quoted do not exhaust all the possibilities of expressing perlative meaning. Compare sentence (40) which cannot paraphrase sentence (39) according to the rule:

(39) Płyń przez rzekę.
Sail across the river.
(40) Płyń rzeka.
Sail up/down the river.

Both sentences (39) and (40) are grammatically correct, but their sense is different. In the light of (39) *po+loc* and *przez+acc* turn out to be the semantic opposites for a semantic feature of orientation in relation to the horizontal axis. Similarly as in the case of the English prepositions *across* and *along*, at the bottom of this opposition there lies a notion of parallelism and criss-crossing. Undoubtedly, the idea of criss-crossing is implicit in cases of nouns denoting volumes and areas. That is why one cannot speak about different morphemes in the case of *przez+acc* in (37), (38) and *przez+acc* in (39) where it cannot be replaced by the instrumental case. The morphemes in (22), (37), and (38) and, on the other hand, in (39) present two different usages of a semantically equivalent unit. It is interesting to note, however, that *przez+acc* represents a different morpheme in the context of perfective derivatives of verbs, e.g.:

(41) Przejdź przez ulicę zebrą/po zebrze

which can be paraphrased as:

(41a) Przejdź na drugą stronę ulicy zebrą/po zebrze,

where *instr* and *po+loc* (*zebrą/po zebrze*) are exponents of perlative meaning, while *przez+acc*(*przez ulicę* — across the street), equivalent to ***na drugą stronę ulicy*** (to the other side of the street), expresses adlative meaning.

Po+loc also has a homonym which co-occurs with the static verbs and the verbs denoting multidirectional motion, e.g.:

(42) Baby płakały po chatach
The old women were crying in their houses.

And

(43) Włóczył się po lesie w zamyśleniu.
He wandered around the woods deep in thought

which when paraphrased by locative constructions

(42a) W chatach płakały baby.
The old women were crying in their houses.

(43a) Włóczył się w lesie zamyślony.
He wandered in the woods deep in thought

differ from them only in that they, i.e. (42) and (43), are marked for the *category of random distribution*. In neither of these two constructions (42), (43) can *po+loc* be replaced by the instrumental. Thus it has been established that only the morpheme *po+loc* which is synonymous with *instr*, is of interest from the point of view of a perlative meaning.

Coming back once again to the confrontation of the three morphemes considered above: *po+loc* (35, 36), *przez+acc* (37, 38, 39) and *instr* (35a - 38a), what conclusions can be drawn from this analysis with respect to the semantic characteristics of *instr*? The only logical deduction from the discussion is that *instr* is definitely marked for proximity and in general denotes immediate contact, interior in case of volume and exterior in case of surface, i.e. immediate contact but unspecified in terms of dimension. The lack of symmetry in the mutual relations of *przez+acc*, *po+loc*, and *instr* can be accounted for by a difference in the depth of the overlapping meanings within the category of dimensionality in case of the morphemes in question.

It will be revealing to juxtapose the classes within the category of relative motion in order to compare how the structures of dimensionality — with special acknowledgment to category of proximity — is rendered within each of them.

Jestem w lesie	Idę lasem	Idę w las/do lasu	z lasu
I am in the woods	I am going through the woods	I'm going to the woods	from the woods

na łące	łąką	na łąkę	z łąki
in the meadow	across the meadow	to the meadow	from the meadow
przy biurku	koło biurka	do biurka	od biurka
at the dask	by the desk	to the desk	from the desk
koło drzewa	koło drzewa	do drzewa	od drzewa
by a tree	by a tree	to the tree	from the tree
u ciotki		do ciotki	od ciotki
at my aunt's		to my aunt's	from my aunt's

This can be presented in the form of the following table of grammatical exponents:

Locative	Perlative		Adlative	Ablative
w } +loc	instr	przez+acc	w+acc	
na }		po+loc	(do+gen)	z+gen
przy }			na+acc	
koło } +gen				
u }		koło+gen	do+gen	od+gen
5	3	1	3	2

This analysis permits one to accept the quadripartite character of a relative motion opposition within the Polish grammatical system of spatial relations — perlative meaning being the fourth distinctive part of relative motion category. The opposition *perlative* : *locative* holds only at one point in the dimensional structure — the category of proximity (i.e. in the case of the morpheme denoting immediacy of contact, *prep+loc* : *instr*). The opposition is completely neutralized at other points in the demensionality structure, i.e. level category and proximity without immediacy; in other words, specified and unspecified proximity. Further analysis reveals the susceptibility of the perlative system to the category of dimension (3 : 2/1=*przez+acc* : *po+loc*), or rather analogously to English *along* : *across*, the capability of conveying geometrically oriented notions of parallelism vs. criss-crossing. It is worth noting that a neutralization also extends to the exponents of the plane category. The relations covered by the plane category are expressed by the exponent of proximity in general, i.e. *koło+gen*. The scope of the neutralization of perlative morphemes compared with locative exponents within the category of dimensionality corresponds to the ratio 9 : 5. The neutralization of the category of dimensionality within the three distinct parts of the relative motion opposition, the perlative, the adlative and the ablative viewed against the fourth, the locative, can be represented as 5 : 9, 7 : 9 and 6 : 9, respectively.

SUMMARY

In both Polish and English spatio-relative systems there exists a quadripartite opposition within the category of motion resulting from a recognition of four basic meanings: *locative* : *perlative* : *adlative* : *ablative*.

As for the structure of dimensionality, both languages render the opposition *tangency* : *proximity*. It seems that the Polish system reflects an overlapping of the category *tangency* : *proximity* with the category of *specified* : *unspecified* relation (except for a perlative system).

The opposition *locative* : *adlative* in the Polish system is best manifested at those points in the dimensional structure which express specified proximity (vertical and horizontal relations). In the English system just the reverse is true: the corresponding points of the dimensional structure reveal vast neutralizations with respect to the category of relative motion (except for the ablative system). This opposition is more clearly expressed in the set of morphemes marked for tangency.

The opposition *tangency* : *proximity* is revealed by all classes of the four meanings of relative motion in English. In Polish the locative and ablative systems consist of three classes of meaning–*immediate* : *proximate* : *unspecified proximate* (*prep+loc* : *prep+instr* : *prep+gen*; *z+/0+gen* : *z+prep+gen* : : *prep+gen*). The adlative system reveals a contrast resulting in two classes *specified* : *unspecified* (*prep+acc* : *prep+gen*). In the context of the three classes discussed above the perlative system seems to hold the position of the so-called exception to the rule. Perhaps to produce a coherent system of dimensional categories within it different criteria should be established.

English utilizes two kinds of morphemes, simple and compound prepositions, to express spatio-relative relations. In the case of compound prepositions one of the components is confined to expressing the relative motion category. Both components may function on their own outside the combination. In Polish, although there seems to exist a bilateral disjunction of functions played by individual subcomponents of morphemes expressing spatial relations, it does not hold true that prepositional submorphemes express dimensional categories, while inflexional endings are the carriers of direction, as one might suspect. In fact, case submorphemes play a double function: 1) They may be considered the indicators of the relative motion category (e.g. *prep+instr* : : *prep+acc=locative* : *adlative*); 2) They also seem to be the indicators of the structural depth of meaning, e.g., a genitive submorpheme in locative, adlative and perlative constructions indicate the least degree of dimensional structurality. (In the case of the ablative class the genitive submorpheme has only the first function).

In light of the present comparison of spatio-relative systems a greater adequacy in expressing the relative motion category is an undeniable property of Polish. On the other hand, the English system possesses richer resources for expressing the dimensionality category, but this has not been illustrated in the present paper because of the very limited number of propositional morphemes included in the analysis; such an exposition remains the topic for a separate paper.

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COREFERENCE AND SENTENCE STRESS IN ENGLISH AND POLISH

ALEKSANDER SZWEDEK

University of Łódź

1. In one of my earlier papers (Szwedek 1974a : 214) I wrote that "there would seem to be in Polish three ways in which coreference is accomplished
   a) pronouns,
   b) intonation,
   c) word order".

At first glance word order seemed to be the most interesting because nothing had been done along these lines before, and besides, the indisputable traditional dogma had always been that the word order of sentence elements in Polish is free. In the course of investigation, however, it was becoming more and more apparent that it is not the word order alone that determines coreferentiality of nouns, but that there is a very close relationship between coreferentiality, word order and the place of the sentence stress.

2. As I have indicated earlier (Szwedek 1974b) sentence stress in Polish may fall on any word, although in some cases it may seem awkward at first glance. As should be expected nothing changes in the coreference if the noun is preceded by a demonstrative pronoun, regardless of the place of the stress. For example, in the sequence sentence (2) of the following pair

(1) W parku widziałem chłopca.
(In park I saw boy)
(2) Ten chłopiec czytał książkę.
(This boy was reading book)

the noun *chłopiec* is coreferential with *chłopiec* in (1), no matter which word bears the sentence stress.

The cases that may be of interest, then, are those in which nouns are not preceded by any coreference marker. In such cases coreference, I claimed, is indicated by word order. Considering (3), (4) and (5), for example,

(3) Chłopiec czytał książkę.
(Boy was reading book)
(4) Książka miała zieloną okładkę.
(Book had green cover)
(5) Zieloną okładkę miała książka.
(Green cover had book)

we find that only (4) can be a sequence sentence of (3). (5) is wrong if it has the same intonation pattern as (4). This last statement is, I believe, crucial for the following discussion.

Two observations can be made as to a) word order, b) sentence stress with respect to (3), (4) and (5):

a) the word order in (4) (as a sequence sentence to (3)) signals that the initial noun is coreferential and the final noun is noncoreferential,

b) the sentence stress in (3) and (4) falls on the noun in the final position. (5) with the same intonation pattern as (4) can not be a sequence sentence of (3).

If, however, the change of the word order is accompanied by a simultaneous change of the place of the sentence stress in such a way that it remains with the same noun, as in (5a)

(5a) Zieloną OKŁADKĘ miała książka.

the sentence becomes a correct sequence sentence of (3).

A simple general conclusion is that it is not the word order alone that determines coreferentiality of nouns, but it is the relation of the segmental structure to the suprasegmental structure that is essential. A particular conclusion is that the noun with the sentence stress has a noncoreferential interpretation and that it most often appears in sentence final position because the normal intonation (as defined negatively by Chomsky (1969) as not having a contrastive or emphatic stress) in Polish has the sentence stress on the last element. It may also be added that it seems natural that the noncoreferential noun (the new piece of information) should bear the sentence stress in sentences with normal intonation.

3. Let us, now, consider briefly the problem in English. Akmajian and Jackendoff (1968) pointed out that stress plays a role in determining how the reference of pronouns is to be interpreted. For example, in sentence (6)

(6) John hit Bill and then George hit him.

him refers to Bill if it is unstressed, but it may refer either to John or to someone other than John or Bill if it is stressed.

With respect to common nouns coreferentiality in such simple sentences as

(7) I bought a book yesterday.
(8) I bought the book yesterday.

is segmentally marked by the articles. And yet, there are also distinct differences as to the place of the sentence stress. In (7) the sentence stress falls on the indefinite noun *book*, and in (8) on *yesterday*, leaving *book* unstressed. The sentence stress on other words in (7) and (8) seems to be of contrastive type. Thus, the stress on *I* emphasizes the fact that it was not somebody else who bought the book, the stress on *bought* — that I did not steal it, the stress on *yesterday* in (7) that it was not a week ago. Notice also that if the stress on *yesterday* in (8) is to be contrastive it must be much stronger and the whole intonation pattern changes. A change of the word order is not possible in English but we may have sentences in which the initial noun is indefinite:

(9) A man was coming.

(as a sequence to something like *I heard a noise and turned round*)
Again, coreferentiality is indicated by the article but at the same time it is the indefinite noun that bears the sentence stress. What has changed here in comparison with a normal intonation pattern is the place of the sentence stress. With the definite article as in (10)

(10) The man was coming.

(as a sequence to, for example, *I had been waiting for a man. I turned round*) the sentence stress will take its normal position on *coming*.

4. A comparison of the following English and Polish congruent sentences may make the issue clearer.

(11) The man was hitting a woman.
(12) A man was hitting the woman.
(13) A man was hitting a woman.
(14) Mężczyzna bił kobietę.
(15) Kobietę bił mężczyzna.
(16) (Jakiś) mężczyzna bił kobietę.

They may be sequences to, for example, the following:

(17) I saw a man in the street.
(18) I saw a woman in the street.
(19) What happened?
(20) Widziałem na ulicy mężczyznę.
(21) Widziałem na ulicy kobietę.
(22) Co się stało?

In (11) and (12) the sentence stress falls on the indefinite noun, which means that the intonation patterns are different but the word order is the same. In respective Polish sentences (14) and (15) the sentence stress also falls on the indefinite noun, and the same intonation pattern is saved at the cost of word order. On the whole word order shift seems to be preferable to sentence stress shift, as in (23)

(23) **MĘŻCZYZNA** uderzył kobietę.

which seems to be of contrastive type as regards the initial noun.

In (13) and (16) the nouns are stressed more or less equally, it seems, which only supports the observations stated above.

It would also be interesting to see how the sentence stress is placed when the two nouns are to have definite interpretation, as in (24) and (25):

(24) The man was hitting the woman.
(25) Mężczyzna bił (tę) kobietę.

with, for example, (26) and (27) as opening sentences:

(26) A man and a woman were standing next to me.
(27) Obok mnie stali mężczyzna i kobieta.

From the observations formulated above it would follow that the stress does not fall on either noun. And indeed, in both (24) and (25) we find that the sentence stress falls on the verb.

The phenomenon presents itself more explicitly if the object noun is replaced by a personal pronoun. For example, (15) becomes

(28) Bił ją MĘŻCZYZNA.

if the preceding sentence is (21). It may also appear as

(29) MĘŻCZYZNA ją bił.

with the sentence stress on the same noun.

We do not have anything like (30)

(30) Mężczyzna bił JĄ.

which again supports the conclusion that definite elements are not normally stressed (unless for contrast or emphasis).

We may also have (31)

(31) Mężczyzna BIŁ ją.

which is a natural continuation of (27) and the initial noun must be interpreted coreferentially.

Likewise in English, in (32) and (33)

(32) The man hit her.
(33) A man hit her.

her is never stressed. (32) with the sentence stress on *hit* is a natural response to (26), and (33) with the sentence stress on *man* is a natural response to (18).

Thus, I think, it is correct to formulate the following conclusions:

a. the relation of the place of the sentence stress to coreference is the same in English and in Polish, and in normal intonation the stress falls on the noncoreferential noun. If there is no noncoreferential noun in the sentence the stress falls on the last prominent word (for example I'm COMING, I read it YESTERDAY), but never on the coreferential noun.

b. the shift of the sentence stress is determined by the possibility of word order changes. In English it is the sentence stress that moves; in Polish either the sentence stress or word order may change provided the stress falls on the noncoreferential noun. It has been suggested that word order change seems to be preferable.

I also want to add that Polish linguists, for example Szober (1967), treated word order change in Polish as something of focus and presupposition problem. The relation between coreference, word order and focus and presupposition is under investigation.

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A COMMENTARY ON ADJECTIVE-PHRASE COMPLEMENTATION IN ENGLISH AND POLISH

MONIKA OSTASZEWSKA

University of Warsaw

In both English and Polish, adjective phrases used predicatively can be complemented by finite or non-finite clauses, or other constructions.

The aim of this paper is to discuss adjective phrases postmodified by non-finite clauses, that is phrases occurring in sentences which would be henceforth referred to as adjectival sentences, i.e. sentences of the structure

NP+BE+Adj+Adj Complement,

where Adj Complement=to-Inf (to-V) or Gerund (V-ing).

V-ing can, but does not have to, be preceded by a preposition (Prep). The symbol V-ing will be used to denote English gerunds, such as *leaving*, *pleasing*, and Polish nominal derivatives: both forms such as *wyjeżdżanie*, *przebywanie*, and forms such as *wyjazd*, *dotyk*.

Several superficially similar but basically different constructions can be distinguished among such phrases.

Sentences of the structure discussed above appear in both English and Polish, but the distribution of patterns is different in each language. Since the variety of syntactically identical but semantically different sentences of the structure discussed is larger in English than in Polish, the English forms will be considered the starting point for this discussion.

All these superficially similar constructions are best accounted for in terms of sets of transformationally related structures. Many structures may be found in more than one set, but it is the whole sets of related structures which allow us to distinguish among the various constructions, since each construction type has its own characteristic set.

Thus, for example, the construction type 3 can be characterized by the following set of structures:

1) NP+BE+Adj+to-V
2) NP+BE+Adj+Prep+V-ing
3) NP+BE+Adj+to-∧

as illustrated by 1) *The soup is ready to eat,* 2) *The soup is ready for eating* 3) *The soup is ready to be eaten.*

Since many — but not all — adjectives fit only one set of structures, a detailed examination of the various sets may lead to the establishment of various adjective classes. Classifications of this kind can be found in Lees (1960a), Vendler (1968), Hutchins (1971), Hudson (1971) or Quirk's recent grammar (1972). Vendler's analysis appears to be the most exhaustive semantically, whereas Quirk and others analyse those constructions mainly in syntactic terms. For Polish, no classification of adjectives in terms of adjective phrase complements has been attempted.

The classification of adjective phrases presented here does not claim to be complete, but the number of transformationally related sets of structures which characterize different constructions discussed in this paper is larger than in other studies.

The structures in question are analysed in terms of internal relations among their components, that is NP, Adj and V, as revealed by the configurations of transforms attached to each construction type.

It is a well-known fact, and here one may quote Lyons (1968 : 327), that "the majority of 'adjectives' in English modify both nouns and verbs in deep structure". This short survey of adjectival sentences only supplies additional evidence for that statement, supporting the theory that adjectives modify not only nouns and verbs, understood as ACTIONS (for instance, *She is a beautiful dancer* in the sense *She dances beautifully*), but also whole clauses, e.g., *John, stupidly, took the job.*

Therefore, it does not come as a surprise that equivalent sentences in Polish often contain other — semantically equivalent — parts of speech, such as adverbs, nouns (e.g. *certain — pewny, pewność*) or verbs (e.g. *be willing — chcieć*) as well as adjectives. Nevertheless, although Polish structures are distributed differently than their English equivalents, separate sets of structures could be established for each construction type, corresponding to a different English construction type.

9 different construction types can be distinguished in English among adjective phrases with non-finite complementation. In Polish only 7 different construction types can be distinguished among adjective phrases with non-finite clause postmodification; in two cases Polish sentences corresponding directly to English sentences with non-finite clauses contain adjective phrases with finite-clause postmodification.

However, since at least 9 different sets of structures can be established for both English and Polish, 9 different syntactic functions have to be ascribed to postmodified adjective phrases in sentences of the structure discussed.

The structures -- or patterns — are as follows:

1.	NP+BE+Adj+to-V	Eng, Pol
2.	NP+BE+Adj+(to-V)	Eng, —
3.	NP_2+BE+Adj+to-V+(for NP_1)	Eng, —
4.	NP+BE+Adj+Prep+V-ing	Eng, Pol
5.	NP+BE+Adj+(Prep+V-ing)	Eng, Pol
6.	NP+BE+Adj+to-$\wedge$	Eng, —
7.	NP+BE+Adj+that-clause	Eng, Pol
8.	NP's+V-ing+BE+Adj	Eng, Pol
9.	V-ing+NP_2+BE+Adj+(for NP_1)	Eng, Pol
10.	To-V+NP_2+BE+Adj+(for NP_1)	Eng, —
11.	It+BE+Adj+(for NP_1)+to-V+NP_2	Eng, —
12.	That—clause+BE+Adj	Eng, —
13.	It+BE+Adj+that-clause	Eng, Pol
14.	To-V+BE+Adj+(of NP)	Eng, —
15.	It+BE+Adj+(of NP)+to-V	Eng, —
16.	NP_2+BE+Adj+Prep+V-ing+(dla NP_1)	—, Pol
Adv_1	NP+V+Adv	Eng, Pol
Adv_2	To-V+NP_2+BE+Adv+(NP_{1Dat})	—, Pol
Verb	NP+NADAWAĆ SIĘ+Prep+V-ing	—, Pol

The total number of sentence patterns — with postmodified adjective phrases — is 15 for English and 8 for Polish. Of the 8 Polish sentence patterns, 7 appear in English and one is restricted to Polish only: NP_2+BE+Adj+ +Prep+V-ing+(dla NP_1) (Sentence Pattern 16), e.g. *Zadanie jest dla nas trudne do rozwiązania*.

Apart from these sentence patterns with adjective phrases, clauses with adverbs directly corresponding to the adjectives have in some cases to be introduced in order to account for differences among various construction types. In one case (Type 3) sentences with the V only, and no adjective, have to be used to differentiate this type from another.

One final remark must be made before any further discussion follows: all NPs marked as NP_2 are equal to the NP acting as the object of the V. All NPs marked as NP_1 are equal to the NP acting as the subject of the V; their presence in most transforms is optional.

Of the 9 sentence types, 3 must be grouped together as sentences in which the subject of the finite copula is the object of the V in the infinitival clause. In sentences of the remaining 6 types, the subject of the finite coupla is at the same time the subject of the V in the clause.

Group I Subject of the finite copula=Object of the V

Note: In all sentences of Group I all Vs are transitive but cannot take any additional direct object, e.g. _*He is easy to please Mary_. That restriction does not hold for sentences of Group II, where Vs can also be intransitive or take direct objects.

Type 1

Subtype (A)

English: (3) The girl is easy (for us) to please
(9) Pleasing the girl is easy (for us)
(10) To please the girl is easy (for us)
(11) It is easy (for us) to please the girl

Polish: (16) Pracownik ten był (dla nas) niełatwy do zdobycia
(9) Niełatwe było (dla nas) (samo) zdobycie tego pracownika
Adv$_2$ Niełatwo było (nam) zdobyć tego pracownika

The English and Polish sentences of Patterns 3 and 6 respectively are examples of object-fronting; others are variants of Pattern 9 and they lend support to the theory that in such sentences Adjs modify Vs, and NPs are modified indirectly, qua objects of the action performed. (Cf. *an easy-to-please girl*, not _*an easy girl_, unless the adjective is used in a different sense).

In English adjectives found in such sentences are *easy, difficult, pleasant,* and *unpleasant*; in Polish — *łatwy, trudny*. The number of adjectives appearing in sentences of Type 1 is limited in both languages.

In a semantic sense, such sentences communicate our evaluation of the quality of the action expressed by the V and can be paraphrased as: *We please the girl — the ACTION is easy.*

All Vs in such sentences are transitive verbs which cannot appear as verb-predicates of intransitive sentences (cf. Lyons (1968 : 352): *John moved the stone—The stone moved* but *We please him*—_*He pleases_).

Subtype (B)

English: (3) The dress is easy (for us) to wash
(9) Washing the dress is easy (for us)
(10) To wash the dress is easy (for us)
(11) It is easy (for us) to wash the dress
Adv$_1$ The dress washes easily

Polish: (16) Zadanie jest (dla nas) łatwe do rozwiązania
(9) Rozwiązanie tego zadania jest (dla nas) łatwe
Adv$_2$ Łatwo jest (nam) rozwiązać zadanie
Adv$_1$ Zadanie łatwo się rozwiązuje

Only the presence of transform Adv$_1$ in English and in Polish differentiates Subtype (B) from Subtype (A). It is also semantically justified, since Vs of sentences of Subtype (B) can also appear as verb-predicates of intransitive sentences.

Again, such sentences can be paraphrased as: *We wash the dress—the ACTION is easy.*

Type 2

English: (2) Her skin is smooth (to touch)

Polish: (5) Jej skóra jest gładka (w dotyku)

Whenever equivalent verbs of the senses are available, these sentences correspond directly to sentences of the *Soup tastes bitter* type (Pol. *Zupa jest gorzka* (*w smaku*)) which can always be paraphrased as *Someone tastes the soup : it is bitter* (Cf. Ostaszewska 1974). Therefore, in such sentences, adjectives should be considered adjectives referring to NPs, not Vs. This is also supported by the fact that the infinitival clause can be omitted in most cases:

Eng. Her skin is smooth

Pol. Zupa jest gorzka (Cf. also Quirk et al. 1972 : 827).

Type 3

English: (2) The soup is ready (to eat)
(5) The soup is ready (for eating)
(6) The soup is ready to be eaten

Polish: (5) Zupa jest gotowa (do jedzenia)
Verb Zupa nadaje się do jedzenia

The passivized form is not possible as a transform of infinitival clauses of Type 2. Perhaps such sentences could be best accounted for in terms of modality and paraphrased as: *We can eat the soup.*

Adjectives found to appear in sentences of Type 3 are Eng. *ready, suitable, good,* and *fit*, Pol. *odpowiedni, właściwy, gotowy* (all these adjectives are in a way semantic equivalents). They do not modify Vs, but act as Vs themselves.

Group II Subject of the finite coupla=Subject of the V.

Type 4

In English, adjectives in sentences of Type 4 enter either Pattern 1 or Pattern 4; in Polish, some enter both patterns, and some only one. Sentences with adjectives which enter both patterns do not have transforms with adverbs. As the differences seem superficial — all these adjectives function in a similar way — such sentences are discussed together as Type 4.

English: 1. (1) He is eager to go
2. (4) He is capable of going

Polish: 1. (1) On jest skłonny pójść
(4) On jest skłonny do pójścia
2. (4) On jest chętny do pomocy
Adv_1 On chętnie pomoże

Vendler (1968 : 103) and Hutchins (1971 : 47) consider adjectives in such sentences as variants of verbal forms such as *want, wish, be ready, be eager*, etc.

Equally interesting is the optional presence of Future Tense forms of the V in sentences with adverbs.

Adjectives in the sentences under discussion appear to reflect the Agent's attitude (as expressed by NP_1) towards the action he is going to or may perform. Therefore, they do not differ from verbs expressing modatity.

In some sentences which do not have transforms with adverbs, e.g., Eng. *He is capable of going* or Pol. *On jest zdolny do zamordowania* (*własnego ojca*)/*morderstwa*, the adjectives seem to reflect the ability rather than the attitude of the Agent: *He is capable of going*=*He can go*; *On jest zdolny do morderstwa* =*On może zamordować*.

Type 5

English: (1) He is stupid to leave.
(8) His leaving is stupid
(14) To leave is stupid (of him)
(15) It is stupid of him to leave
(12) That he leaves is stupid

Polish: (7) On jest nierozsądny, że wyjeżdża
(8) Jego wyjazd jest nierozsądny
(13) To, że wyjeżdża, jest nierozsądne

In English, structures 8, 14, 15, 12 are variants of the same sentence with the infinitival clause acting as the subject. The presence of the prepositional phrase (of NP_1) is optional. In Polish, structures 8 and 13 are variants of the same sentence; the possesive pronouns are optional.

In such sentences the adjectives modify both NPs and Vs at the same time. The NPs act as Agents of the Vs and those sentences might be paraphrased as sentences with adverbial complements, e.g., Eng. *He is stupid because he leaves*. *He is stupid if he leaves* : *He acts/will act stupidly, leaving*; Pol. *Jest niemądry, ponieważ wyjeżdża* : *Wyjeżdżając postępuje niemądrze*. Therefore, in sentences of Type 5 the NP is modified by the Adj qua ACTION.

These adverbial derivatives act as sentence, not verb-adverbs (cf. Vendler 1968: 104):

John, stupidly, took the job at once

but

John walks slowly.

Since adjectives appearing in such sentences modify neither Vs nor NPs but whole sentences, they in a way evaluate EVENTS from the speaker's point of view. Therefore, sentences of Type 5 can also be paraphrased as, for instance: *He leaves and it is stupid*.

Type 6

English: (1) He is certain to go
(8) His going is certain
(12) That he will go is certain

(13) It is certain that he will go

Adv$_1$ He will certainly go there

Polish: (13) (To) jest pewne, że on tam pójdzie

(8) Jego pójście tam jest pewne

Adv$_1$ On pójdzie tam na pewno/z pewnością

In such sentences adjectives again modify whole sentences. Their function is the same as of adverbial derivatives acting as sentence-adverbs.

Since sentences of Type 6 refer to future, the infinitival clause in its non-finite transforms must include Future Tense forms of the V.

From the syntactic point of view, it is the least homogeneous class of adjectives. Only *certain* enters all the transforms. *Probably* refuses (1): **He is probable to go*. *Likely* refuses Adv$_1$; *true* and *false* enter only (1) (cf. Vendler 1968 : 105). The same is true for the opposites.

In Polish, we find *pewne*, *prawdopodobne*, *możliwe* (no Adv$_1$), *niewykluczone* (no Adv$_1$), etc. The only Polish sentences equivalent to English sentences with *true* and *false* are those with *prawda* and *nieprawda*: *Prawdą jest, że...*

Contrary to the sentences of Type 5 in which adjectives also function as sentence-adverbs, sentences of Type 6 cannot be paraphrased as "because" sentences. They express the speaker's evaluation of the degree of probability as concerns the fact that ACTION takes/will take place. Therefore, they can be paraphrased as *I think he may go*.

Type 7

English: (1) He is proud to leave

(4) He is proud of leaving (Paris)

(7) He is proud that he is leaving (Paris)

Polish: (4) Jest dumny z przebywania w jego towarzystwie

(7) Jest dumny, że przebywa w jego towarzystwie

Although sentences of this type might also be paraphrased as *He is proud because he is leaving*, *Jest dumny, ponieważ wyjeżdża*, the adjectives do not modify Vs:

Eng. *His leaving is proud

Pol. *Jego przebywanie jest dumne

Although in some cases sentences with adverbial derivatives do exist, e.g. *He left proudly*, *Wyjeżdżał dumnie*, it seems that they are not exactly equivalent to adjectival sentences since they contain typical manner adverbials modifying only Vs regardless of the agentive NPs. We can even say:

Eng. He was proud to leave humbly

Pol. Był dumny (z siebie), że wyjeżdżał pokornie

Therefore, adjectives in such sentences modify NPs.

Type 8

English: (1) He is slow to react

Adv$_1$ He reacts slowly

Polish: (4) On jest powolny w reakcjach
Adv_1 On reaguje powoli/wolno

Most Pattern (1) sentences have transforms with adverbial derivatives but often the "adverbial" sentences have different meanings, e.g. *He is slow to kiss the girl — He slowly kisses the girl*. The "adverbial" sentences are usually ambiguous; the adverb can often be perceived as modifying only the action.

Adjectives of this type might be considered as functioning as time-and-manner adverbials. Their adverbial equivalents do not refer to the manner in which the actual performance is carried out but to the way in which the Agent is setting about performing the action expressed by the V. Therefore, they act like adverbs, although they do not modify the V action.

Sentences of Type 8 can be paraphrased as *It takes him a long/short time to react* or, for instance, *He (usually) reacts after a long/short time*.

Adjectives found in sentences of Type 8 appear to be the "speed" adjectives: Eng. *slow, fast, quick*; Pol. *szybki, powolny*.

Type 9

English: (4) He is good at skiing
(8) His skiing is good
Adv_1 He skis well
Polish: (4) On jest doskonały w jeździe na nartach
(8) Jego jazda na nartach jest doskonała
Adv_1 On doskonale jeździ na nartach

Adjectives in such sentences are basically adverbs which modify the V. Therefore, the NP is modified by the Adj qua ACTION. The adjectives should be treated as manner adverbials and such sentences can be paraphrased as, for instance. *He skis and the ACTION is good*.

Furthermore, it can be added that although the number of patterns in Polish is quite large, the number of adjectives used in constructions discussed here is definitely smaller, the reason being that Polish often makes use of other parts of speech. Therefore, in most cases equivalent sentences in Polish would be rendered as sentences with verbs, prepositional phrases or — obviously — adverbs, all being semantically equivalent to adjectives appearing in English sentences, for instance:

Eng. He is impatient to go
Pol. Niecierpliwi się, by pójść tam wreszcie
Eng. He is certain to come
Pol. On z pewnością przyjdzie
Eng. He is likely to go
Pol. On prawdopodobnie pójdzie,

although the pattern itself (i.e. NP+BE+Adj+to-V) does exist in Polish, for instance:

Pol. On jest skłonny pójść.

This short survey of types of adjective-phrase complementation in English and Polish does not claim to be exhaustive. However, it would appear that if all the possible types and subtypes of phrases were examined, the emerging set of patterns might help classify all adjectives according to their semantic functions, which are obviously connected with their syntactic functions. Many adjectives would enter more than one type of transformationally related structure set, but nevertheless some clearly defined adjective classes can be predicted.

The fact that both in English and in Polish semantically similar adjectives enter separate sets of structures allows the hope that a general framework based on sets of semantically identical constructions can be used in analysing more than one language.

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SOME REMARKS ON PSEUDO-CLEFT SENTENCES IN ENGLISH AND POLISH

ALEKSANDRA MIESZEK

Adam Mickiewicz University, Poznań

4

1. *Pseudo-cleft sentences in English*[1].

Pseudo-cleft sentences are sentences composed of a wh-relative clause functioning as a subject or complement (Quirk 1972: 954), a copula verb — the presence of which is a characteristic feature of these constructions — and a constituent made prominent by its occurrence in the post-copular position. Their pattern can be represented in the following way:

$$S_{rel}\, V_{cop} \begin{Bmatrix} \text{COMPLEMENT} \\ \text{SUBJECT} \end{Bmatrix}$$

Two types of relative clauses can appear at the beginning of the pseudo-cleft sentences: the clauses with a nominal phrase containing a head-noun and headless relative clauses, e.g.,

1) *The one* Nixon chose was Agnew.
   Who Nixon chose was Agnew.
2) *The thing* that John bought was a car.
   What John bought was a car.
3) *The time* at which I met John was 4 o'clock.
   When I met John was at 4 o'clock.

A more detailed pattern is as follows:

$$(\text{N})\ \text{wh-}_{rel} \overset{S_{rel}}{\overline{\qquad\qquad}}\ V_{cop} \begin{Bmatrix} \text{Comp} \\ \text{Subj} \end{Bmatrix}$$

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[1] The main source of this article is Akmajian (1969).

N=noun; $\mathrm{wh}_{\mathrm{rel}}$=wh- relative pronoun; $\mathrm{S}_{\mathrm{rel}}$=relative caluse; $\mathrm{V}_{\mathrm{cop}}$=copula verb; Comp=complement; Subj=subject.

The pronoun *one* (singular or plural) may be the head of the initial relative clause. Due to the number agreement, a singular head must be followed by singular forms of: the verb in the relative clause, copula, and the element in the focus, i.e. in the post-copular position. Person agreement is only partially observed. Since the head-pronoun is always the third person, the verb in the relative clause will naturally reflect this dependency by taking a third person form too. The copula will also appear in the third person, disregarding the form of the personal pronoun that may follow it.

4) *The one* who likes coffee *is you*.
5) *The one* who know*s* everything *is me*.

Moreover, all the personal pronouns that occur in the focus are in the objective case[2]. It is only in the inverted pseudo-cleft sentences, in which the focus pronoun takes the subject position, that the subject pronoun is marked for nominative. The copula agrees, then, with the subject both in number and in person; the verb of the relative clause agrees with the relative pronoun or its subject.

6) *I am* the one *who* $\begin{matrix}\textit{does}\\ \text{*do}\end{matrix}$ this job.
7) *I am* the one who(m) *he wants* to meet.
8) He is the one who *I want* to meet.
9) *They are* the ones *who* never *know* what to do.

Another interesting point is provided by the reflexive pronouns used whenever an identity of reference takes place. The reflexive pronoun is either a third person singular or plural depending on the form of the head-pronoun. Consequently, there is no person agreement between the focus pronoun and the reflexive.

10) *The one* who shaves *himself* with a (...) razor is not *me*.
11) *The ones* who nearly drowned *themselves* out in the lake are *you and me* (Akmajian 1969: 7).

If, however, the personal pronoun is shifted from the focus position to the front of the sentence and functions as a subject, the reflexive pronoun agrees with it.

12) *I* am the one who cut *myself*.
13) *I* am the one who has to protect *myself* (Akmajian 1969: 7).

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[2] O. Jespersen notices that "on the whole the natural tendency has been towards a state in which the nominative of pronouns is used only where it is clearly the subject) and where this is shown by close approximity to (...) a verb (generally before a verb) while the objective is used everywhere else" (quoted by Akmajian 1969 : 4).

This is the only case in which the person agreement is permitted. The following sentences are considered unacceptable.

14) **The one* that cut *myself* is *me*.

15) **The one* that cut *yourself* is *you*.

16) **The ones* that cut ourselves are *us* (Akmajian 1969: 8).

So, the form of the reflexive pronoun is essentially determined by the head of the initial relative clause, and may be either a third person singular or plural.

The head pronoun, which at the same time is the subject of the pseudo-cleft sentence, also determines the form of the possessive pronouns. They are third person singular and plural, depending on the number of the head.

17) *The one* who looked after *his* child was *me*[3].

18) *The ones* who prepared *their* breakfast were *us*.

The agreement between the possessive pronouns and the head of the pseudo-cleft sentence appears to be subject to no exception. Even phrases in which the person identity between the subject and the possessive pronoun is semantically relevant conform to this pattern when pseudo-clefted (Akmajian 1969).

19) I turned up my nose at the suggestion (Hornby 1963: 1089).

20) *The one* who turned up *her* nose was *me*.

21) **The one* who turned up *my* nose at the suggestion was *me*.

22) We could not contain ourselves for joy.

23) *The ones* who could not contain *themselves* for joy were *Jim and I*.

The above examples point to the syntactic role of the head of the initial clause in the formation of two agreement patterns prevailing in the structure of the pseudo-cleft sentence — number and person agreements. First of all, it imposes the number on the verb of the clause, on the copula and the focus element. Secondly, it requires the person concord with the verb of the clause and with the copula. This regularity justifies the peculiar co-ocurrence of the first person focus pronoun with the third person possessive which refers to it.

The head position may be also filled in by such words as *thing, place, reason, way*, etc.

23) *The one* (who) Nixon chose was Agnew.

24) *The thing* that John bought was a car.

25) *The place* where I saw John was Boston.

26) *The time* at which I met John was 4 o'clock.

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[3] Sentences 17 and 18 are ambiguous in that the third person possessive is not necessarily coreferential with the first person pronoun in the focus. We can say:

The one who looked after *my* child was *him*.

as well as

The one who looked after *his* child was *me*.

The coreferentiality will be made clear if the possessive occurs with the adjective *own*:

The one who looked after *his own* child was *me*.

27) *The reason* that John came was to irritate me.

28) *The way* John did that was by standing on a ladder (Akmajian 1969: 14).

The agreement holding within these sentences concerns the number alone The person does not come into question, since the focus elements are complements and adverbials.

Some relative clauses of the pseudo-cleft sentences seem not to admit of any head nouns for reasons yet unknown. The following examples, for instance, must be rejected as unacceptable;

29)* [the thing
the things
the one(s)
the stuff
the group] that destroyed the grass was a herd of cattle[4].
(Akmajian 1969 : 17)

30) *The thing I want to meet is a bachelor.

Corresponding headless clauses, give perfectly grammatical sentences:

29a) What destroyed the grass was a herd of cattle.

30a) What I want meet to is a bachelor.

31) Where John went was to Boston (Akmajian 1969: 16).

The above sentences might be treated as a product of the reduction process which deletes the head-noun leaving an appropriate wh-word in its place. There may be cases, however, in which it will be difficult to find a proper head-form for the initial relative caluse and, consequently, the reduction process will not apply. For this reason Chomsky's proposal of deriving cleft sentences seems to have stronger grounds:

[It (Nixon chose)] (→who Nixon chose)
[It (John bought something)] (→what John bought)
[It (I saw John somewhere)] (→where I saw John)...
(Akmajian 1969 : 15)

Indefinite elements such as *one*, *somewhere*, *somehow*, *something*, etc., are replaced by the corresponding wh-relative pronouns which in the process of extraposition are shifted to the initial position of the relative clause. In case of the cleft constructions *it* is placed in the subject position of the relative clause.

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[4] There must be some identity with respect to the nature of the head-noun and the focus noun. All the head-houns in 29 and 30 do not meet this requirement and that is why they are unacceptable. However, the sentence

The group of animals that destroyed the grass was *a herd of cattle*

cannot be rejected on the same grounds, since the relation between *the group of animals* and *a herd of cattle* is that of identity (the meaning of the head phrase is broader than that of the focus complement *a herd of cattle*). Maybe the lack of identity between the head and the focus element makes the following sentences unacceptable (noun = prepositional phrase):

**The place* that I went to was *to Boston*.

**The place* to which John went was *to Boston*.

**The place* where John went was *to Boston* (Akmajian 1969 : 16), but: Where I went was to Boston.

Cleaving process is subject to some restrictions as regards permissible operations and elements that can be cleaved out. It is immaterial whether the focus element is under the domination of NP or VP (i.e. verb phrase complements). What is relevant is the fact that it is a kind of a nominal or can function as a nominal. Thus, the focus position permits the occurrence of noun phrases (with possible modifiers), adverbials in the form of prepositional phrases and verbal complements, if they are either nominalized or introduced by the head nouns such as "fact" (Akmajian 1969 : 14).

Verb complements in the form of infinitives are less acceptable, though should not be totally rejected. Some linguists argue as to the acceptability of sentences like 33:

32) What they condemned him to was death.

33) What they condemned him to was to die (Bowers 1968: 86).

34) What she prefers is to talk with us (Wagner 1968: 89).

In these sentences the infinitive corresponds to the abstract noun resulting from the nominalization. Although sentences with an infinitive in the focus are less grammatical than those that contain the corresponding nominalized forms, they are still acceptable.

35) What you have got to do is *to destroy* this thing (...) (O.W. 216)

36) What he's done is (to) spoil the whole thing.

37) What John did to his suit was (to) ruin it. (Quirk 1972: 954)

38) What I'm going to do is (to) teach him a lesson.

The cleaved part of the sentence puts on a form of an infinitival clause with optional *to*. If the verb is used in progressive tense the complement must take the same form to match it.

39) What I'm doing is teaching him a lesson (Quirk 1972: 954).

Relative clauses can also appear in the focus, e.g.

40) What I want you to do is merely what you have done before (O. W. 288)

The constraints imposed on cleaving various elements are numerous. Thus, it is impossible to isolate any of the internal constituents of the focus nominal expression, since they make up a whole which loses its meaning when split up. This restriction refers to some prepositional phrases within the noun phrase and also to the genitive expressions.

41) He read *the preface to the editor*[5].

42) What he read was the preface to the editor.

43) *What he read to the editor was the preface (Lees 1963: 378).

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[5] The sentence can be interpreted in two ways because it is ambiguous (one can ascribe two different underlying structures to it).

The splitting of the phrase *the preface to the editor* results in a change of meaning. The prepositional phrase *to the editor* modifies *the preface* in the attributive sense, while in the sentence **43** it functions as a complement.

The difference in meaning caused by isolating the attribute of the noun phrase is more evident in the following example in which the atrribute is a non-animate noun. The split produces ungrammatical sentences.

44) He read the preface to the book (Lees 1963 : 378).
45) What he read was the preface to the book.
45a) *What he read to the book was the preface.
45b) *What he read the preface was to the book.
46) I am afraid of Peter's dog.
47) What I am afraid of is Peter's dog.
47a) *$\left\{\begin{array}{l}\text{What}\\ \text{Whose}\end{array}\right\}$ dog I am afraid of is Peter's.
47b)* What I am afraid Peter's of is dog.

There are cases in which the appearance of a prepositional phrase in the focus of the pseudo-cleft sentences is grammatically acceptable, though the corresponding cleft construction with the same prepositional phrase in its focus is perfectly correct. Akmajian (1969: 21) gives the following possibilities, all of which he considers ungrammatical:

48) *The one that I spoke to was to John.
48a) *The one to whom I spoke was to John.
48b) *The one that I spoke to was to John.
48c) *Who I spoke to was to John.
48d) *Who I spoke was to John.

but: It was to John that I spoke.

According to him, there is no justification for the appearance of the preposition *to* in the focus. Sentences 48 - 48d are being rejected on the grounds that the head-noun *one* cannot correspond to the prepositional phrase *to John* (noun = prepositional phrase). The rest of the quoted examples do not reveal the source of the preposition *to*.

It seems to me that *to* does not need to appear in the focus of the pseudo-cleft sentence, since it is not inherently connected with the noun *John* or any other noun permitted in this position. It expresses a certain relation between the action of speaking and its receiver. The preposition *to* indicates the direction of this process (speaking). For this reason it is neither attached to a verb nor to its complement. It appears with a verb in the pseudo-cleft construction and with a noun in the cleft one. Thus the acceptable variants of the discussed pseudo-cleft sentences may be:

49) Who I spoke to was John.
49a) The one that I spoke to was John.
49b) The one to whom I spoke was John.

The corresponding cleft sentences may express the relation between the process of speaking and its receiver in two ways:

50) It was *to* John that I spoke.

50a) It was John $\left\{\begin{array}{l}\textit{to whom I spoke}\\ \textit{who I spoke to}\end{array}\right\}$

The pseudo-cleft sentence draws our attention to the receiver of the action, and the cleft sentence emphasizes either the receiver (50a) or the direction of the transmitted information[6]. The instances quoted below are not rejected as ungrammatical, though they contain prepositional phrases in the focus, e.g.

$\left.\begin{array}{l}\text{51) Where I saw John was in Boston.}\\ \text{52) When I met John was at 4 o'clock.}\end{array}\right\}$ (Akmajian 1969: 14)

53) Why I did it was out of spite.

This would indicate that prepositions are not permitted in the focus of the pseudo-cleft sentences which cleave out objects.

Some nouns are preceded by a preposition so that no article may be inserted between them. They become idiomatic and do not submit to cleaving.

54) I dropped it on my foot (Lees 1963: 379).

54a) What I dropped it on was my foot.

but: 55) I went there on foot.

55a)* What I went there on was foot.

A similar constraint is imposed on adverbials. They can occur in the focus but no splitting is admitted.

56) I called on him in the afternoon.

56a) *When I called on him in was the afternoon.

Another restriction makes it impossible to cleave out an indirect object nominal by a mere rearrangement of nominal elements within the sentence (Lees 1963 : 380). Direct objects can be isolated without difficulty.

57) Mary wrote John a letter.

57a) *Who Mary wrote a letter was John.

57b) What Mary wrote John was a letter.

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[6] Jacobs and Rosenbaum (1968 : 138) treat prepositions as the features of nouns and as such uniquely associated with them, but this approach fails to account for such phenomena as the occurrence of different prepositions with the same noun under specific conditions, e.g.,

The day (*on* which) I met you.

In the days to come (Hornby 1966 : 250).

Their treatment of prepositions does not explain why they cannot appear in the focus, either. If the prepositions had been attached to the nouns they should have appeared together with the latter, which is not the case with the pseudo-cleft sentences.

Fillmore's theory of cases rather than that approach can throw some light on a more convincing interpretation of prepositions and their behaviour in various constructions.

If, however, the source sentence contains a preposition *to* before the indirect object, the cleaving process meets no obstacles.

58) Mary wrote a letter to John.

58a) Who Mary wrote a letter to was John.

We cannot isolate predicate nouns in copula sentences (Lees 1963: 380),

59) She is a teacher.

59a) *What she is is a teacher.

There are some prenominal determiners that prevent cleaving of the nominals they precede. They are: *no*, *every*, *neither* (Lees 1963 : 380).

60) No man helped — *Who helped was no man.

61) Every man helped — *Who helped was every man.

62) Neither man helped — *Who helped was neither man.

Not all the adverbials can occur in the focus of the cleft and pseudo-cleft sentences. Only ordinary adverbials such as *slowly*, *here*, *now* can be abstracted by means of cleaving. The adverbials closely connected with verbs (the so-called verb particles), attributive adverbials and sentence adverbials cannot be cleft out (Lees 1963: 381).

63) I got up early.

63a) *How I got early was up.

64) I look forward to seeing him.

64a) *How I look to seeing him is forward.

65) I know her very well.

65a) *How I know her well is very.

66) I came here almost at five.

66a) *How I came here at five was almost.

but: 67) I answered the question quickly.

67a) How I answered the question was quickly.

Finally, certain types of sentences do not submit to the cleaving process at all. These are existential sentences with expletive *it*, to mention two (Allan 1971: 8).

There in existential sentences plays a role of the subject and yet the pseudo-cleft version of the sentence *There are many lonely people in the world* is not grammatically correct. Obviously, *there* as a subject has a specific status.

Expletive *it* is also a subject of the sentence given below and yet cannot be abstracted either.

68) It is snowing — *What is snowing is it. *It is it that is snowing.

It used at the beginning of the cleft sentence has itself an expletive character and probably this makes it impossible to isolate it from the expletive sentence 68. The pseudo-cleft sentence being an underlying structure of the cleft sentence does not permit the occurrence of *it* in the focus as well.

2. *Polish counterparts of English pseudo-cleft sentences.*

Polish does not have a distinct group of sentences which, by virtue of their structural characteristics, might be called "pseudo-cleft". Two types of English pseudo-cleft constructions which cleave out complements and subjects have counterparts in Polish. In general, their pattern can be represented in the following way:

Jan lubi frytki.
(*To*), *co* Jan lubi, *to* frytki.
(*To*), Rel_{pron} ——— *to* (V_{cop}) Compl

Rel_{pron} = relative pronoun *co*; *który*—in case of a human noun
S = sentence
V_{cop} = copula
Compl = complement

The demonstrative pronouns form a kind of a frame which is superimposed on the sentence:

To, rel_{pron}, ———, to ———

Due to this operation, the sentence is split into two parts. The two pronouns serve a cataphoric function in that they both point to the focus element, placed at the end of the sentence. The initial demonstrative *to* is accompanied by the correlated relative pronoun *co* (of the same shape as the interrogative *co*). *To* is optional in many cases. The other demonstrative *to* is a mere pointer. It may be followed by the copula but more frequently it stands on its own, replacing the copula[7].

69) (*To*), *co* Jan kupił, *to* samochód.
70) *To, co* czułeś do mnie przez cały czas (...), *to była* miłość (J. B. 161).
71) *To, co* podziwiam u niego, *to* jego wytrwałość.
72) Ale *czego* mu osobiście zadroszczę (...), *to* czułości, jaką potrafił przepoić swój stosunek do własnego domu (T. J. 4: 7).
73) *Czemu* się dziwię, *to* właśnie jego naiwności[8].
74) *To, czego* chcemy się dowiedzieć, *to* ilość słów, jakie używamy na co dzień.
74a) *To, co* chcemy wiedzieć, *to* ilość słów, jakie używamy na co dzień.

The case of the relative pronoun is determined by the verb of the relative clause. The case of the focus element is also set by the verb. In most cases in which the copula follows the second demonstrative *to*, or when it is implicit (sentences 74 and 74a) the focus element is in the nominative.

The occurrence of the copula after the second *to* is somewhat obscure. As has been already mentioned, it does not appear in the majority of cases, and one may treat the sentences like 69, 71, 72, 73, as constructions in which one of the two identical verb phrases has been deleted, e.g.

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[7] The pointer *to* is sufficient to make the element it precedes emphatic.

[8] Initial relative clauses which open with such nouns as *człowiek, mężczyzna, kobieta, osoba* are more likely to be accepted than those starting with a pronoun.

75) Czego mu zazdroszczę, to czułości mu zazdroszczę.

76) Czemu się dziwię, to jego naiwności się dziwię.

The case of the cleaved element would support this hypothesis, as it is affected by the rection with the main verb. On the other hand, there are sentences in which the copula is used. These are usually sentences that relate some past state, e.g.

70) *To, co* czułeś do mnie przez cały czas (...), *to była* miłość.

77) *To, co* podziwiałam u tego człowieka, *to była* jego ogromna cierpliwość.

However, the same sentences may be said without the copula and again, the case of the focus element will suggest the identical verb phrase deletion rather than the presence of the copula verb.

77a) *To, co* podziwiałam u niego, *to* jego *ogromną cierpliwość*.

Sentences 74 - 74a contain two different verbs in relative clauses: *dowiedzieć* and *wiedzieć*, which require the complement in the dative and accusative respectively. However in both sentences the focus element is used in the nominative, thus implying the existence of the copula in the underlying structure. This evidence seems to give support to the twofold nature of the focus position in those Polish pseudo-cleft sentences which abstract complements.

If a human noun is a complement, the initial relative clause opens with the demonstrative *ten/ta/to/ci/te*, (or more frequently with a head-noun like *człowiek, osoba, mężczyzna, kobieta*), depending on the gender and number of the complement. In these cases the relative pronoun *który* is used.

78) $\left\{\begin{matrix}\textit{Ten}\\ \textit{Człowiek}\end{matrix}\right\}$, *o którego* tak dopytywałeś, *to* właśnie Drzewiecki.

79) *Ci,* których najbardziej zapamiętałam, *to* bracia Rojek.

Another group of Polish sentences, which isolate the subject, have the following pattern:

$$\begin{matrix}(N)\\ Dem_{nom},\end{matrix}\left\{\begin{matrix}\text{który}\\ \text{kto}\\ \text{co}\end{matrix}\right\} S \text{ —— } \text{to } (V_{cop}) \text{ Subj}$$

N — head-noun (człowiek, osoba...)

$$Dem_{nom} \longrightarrow Dem_{instr}/V_{cop}$$

Dem_{nom}=demonstrative personal pronoun *ten/ta/to* in nominative; Dem_{instr}= demonstrative personal pronoun in instrumental
Subj=subject (nouns or clauses)

The initial demonstrative pronoun has three genders and number. The relative pronoun that follows the head-form of the clause is chiefly the adjectival pronoun *który/która* but the substantival pronoun *co* and occasionally *kto* may occur as well (Urbańczyk 1966 : 364). The presence of the head-pronoun in the sentences of this type is obligatory, since the pronoun ***który*** must define some nominal element.

80) *Ten, który* tam stoi, ***to*** mój brat.
(Tòn, kotryż tam steji, je mój brat) Polański (1967: 79).

81) *Ten, który* odpowiada za wszystko, ***to*** Kowalski.

82) *Ta, co* tak ładnie tańczy, ***to*** córka prezesa.

83) *To, co* właściwie najbardziej ogranicza naszą swobodę, ***to*** dziecko.

84) *To, co* nas łączy w Hiszpańskiej Ameryce, ***to*** nasz piękny język i nienawiść wobec Stanów Zjednoczonych (St. 22: 8).

The constructions with the copula verb in the focus position have a pronominal head in the instrumental case.

85) *Tym, co* go przestraszyło, ***był*** krzyk (F.K. 14).

86) *Tym, co* ich zarazem zbliża i oddala ***jest*** charakter wizji przyszłego stanu ludzkiego (K.W. 201).

87) *Tym, co* mnie do niej przyciągnęło, ***była*** jej samowystarczalność. (J.B. 131)

Sentences 88 and 89 have the inverted word order of the pseudo-cleft sentences with the subject in the initial position. Being regular relative clauses, they are more acceptable than 80 - 82, though the latter are also to be found in Polish.

Since only substantive demonstrative pronouns are permitted at the beginning of Polish relative clauses, the range of the abstracted constituents of the sentence is restricted to complements and subjects. All kinds of adverbials and attributes are exposed by means of lexical indicators of emphasis, e.g. particles[9], and word order variations.

88) *Gdzie mieszkałem w czasie wojny, to była Warszawa.

88a) *Gdzie mieszkałem w czasie wojny, to w Warszawie.

89) $\left\{\begin{matrix}\text{Miejsce}\\ \text{Miasto}\end{matrix}\right\}$, w którym mieszkałem w czasie wojny, to Warszawa.

Only relative clause with a head-noun is acceptable when the adverbial of place is isolated. The same formula does not, however, apply to other adverbials, i.e. time and manner.

90) *Czas, w którym go spotkałam, to piąta godzina.

91) *Sposób, w jaki go pytała, to chaotycznie.

Just as in English, juxtapositions do not permit cleaving of their internal elements.

92) Czego nie mogłam zdobyć, to *poradnika dla turysty*.

92a) *Czego nie mogłam zdobyć dla turysty, to poradnika.

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[9] Mirowicz (1971: 149) applies this term to such words as *to, nawet, tylko, przecież, to właśnie*, which impose the speaker's individual interpretation on the sentence, or emphasize one of its constituents. They are directed to the listener as a sort of comment.

92b)* Dla kogo nie mogłam zdobyć poradnika, to dla turysty.

Sentences 92a - 92b are grammatically correct but they express the meaning different from that in 92. Only when the prepositional phrase is loosely connected with the noun can we cleave it without the risk of changing the original meaning.

93) Czego nie lubię, to herbaty ze śmietanką.

93a) Czego nie lubię ze śmietanką, to herbaty.

93b) Z czym nie lubię herbaty, to ze śmietanką.

It is impossible to isolate syntactically a predicate noun from a copula sentence. The reason for this is that the predicate noun does not function as the complement in this type of sentence, and in Polish the cleaving process is essentially connected with the role of the elements in the sentence; thus only complements and subjects submit to this process.

94) On jest inżynierem.

95) *Czym on jest to inżynierem.

Sentences that lack subjects and complements do not undergo the cleaving operation either.

96) Jest zimno od samego rana. — *Od kiedy jest zimno, to od samego rana.* Co jest, to zimno.

The individual constituents may be exposed by means of emphatic particles alone.

3. *Comparison of English pseudo-cleft sentences with their Polish counterparts.*

Out of all the English pseudo-cleft sentences only two types have syntactically corresponding constructions in Polish. Thus, the syntactic comparison of the sentences under discussion must be reduced to those two cases. The emphasis conveyed by the remaining pseudo-cleft sentences is rendered in Polish lexically, and will not be considered here.

The Polish constructions which I labelled "pseudo-cleft" cleave out complements and subjects. Their syntactic patterns show certain similarities with the English ones. Both in English and Polish the focus position of the discussed sentences is final. In English, however, the presence of the copula is necessary. Post-copular position appears to carry more emphasis than any other position in the sentence. In Polish the demonstrative particle *to* alone clearly points to the part of information we want to stress and does not need to be accompanied by the copula. As a result, the majority of Polish pseudo-cleft sentences contain only a pointer *to* in the place taken by the copula in English:

97) *What* John bought *was* a car.

98) (*To*), *co* Jan kupił, *to* samochód.

The absence of the copula verb in Polish pseudo-cleft sentences does not necessarily mean that it never appears in the focus position. It occurs especially in the past tense, and in a number of instances it is implicit. Thus the sentence *to jest* X may be considered the source of the second demonstrative *to*. In many by the preposition *to*. In Polish inflexional endings of the nouns help eliminate ambiguity and both direct and indirect objects submit to cleaving.

111) Mary wrote John a letter.

111a) *Who Mary wrote a letter was John.

but: Who Mary wrote a letter to was John.

112) Maria napisala Janowi list.

Pronominal determiners such as *every, neither, no one/none*, etc. cannot be isolated in English and Polish.

113) *Who helped me was no one.

114) *Tym, kto mi pomógł był nikt.

114a) *Tym, kto mi pomógł nie był nikt.

English does not allow the abstraction of attributive adverbs and sentence adverbials in the focus.

Finally, existential sentences do not submit to cleaving in both languages.

Pseudo-cleft sentences are not very common in spoken English[11] since emphasis can be well expressed by means of intonation and stress. In the written text it is more difficult to establish which part of the sentence is the most relevant for communicating new information[12]. This is the reason why syntactic indicators of emphasis (e.g. emphatic *do*, certain permissible changes in word order, cleft and pseudo-cleft sentences) are employed. The initial part of the pseudo-cleft sentence relates the whole to its context and signals the emphasized element placed in the focus (final position after the copula or pointer *to*), which makes the emphasis clear.

Pseudo-cleft sentences discussed here are fairly rare in Polish. Numerous changes of word order and the use of emphatic particles render clear emphasis. To many Poles these sentences seem awkward and outlandish.

Students who were asked to provide Polish equivalents of some chosen English pseudo-cleft sentences (with headless initial clauses) tended to render them by Polish relative clauses with head-nouns, e.g.,

115) Who I spoke to was John.
Osobą, z którą rozmawiałam był John.

116) *Where* I saw John was in Boston, not New York.
Miejscem, w którym widziałam Johna *był* Boston, nie Nowy Jork.
Miasto w którym widziałam Johna, *to* Boston, nie Nowy Jork.
**Tam*, gdzie widziałam Johna, *to* Boston.

117) *Where* the literary approach fails is in ingoring the existence of the contemporary spoken language.

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[11] Irish, however, makes a superfluous use of these sentences (cf Jespersen 1949 : 149).

[12] Various linguists discuss pseudo-cleft and cleft sentences in terms of the functional sentence perspective. From this point of view "the pseudo-cleft sentence makes the distinction between given and new parts of the communication" (Quirk 1972 : 954).

Słabym punktem koncepcji literackiej jest ignorowanie...
Miejscem, gdzie literackie podejście nie zdaje egzaminu...
Tym, co zawodzi w języku literackim, *to* ignorowanie...

118) *What* we want to know is the number of words we use in everyday affairs
To, co chcemy wiedzieć, *to* liczba słów, jakie używamy na co dzień
To, czego chcemy się dowiedzieć, *to* ilość słów, jakie...
Zasadniczą rzeczą, którą chcemy poznać, *to*...
Liczba wyrazów, których używamy na co dzień jest tym, *co*...
Ilość słów, których używamy w codziennych sprawach, *oto*, *co* chcemy poznać.

One may usually encounter these types of sentences in the Polish literary translations from English, French, or Greman, which use such syntactic means of emphasis more frequently. Pseudo-cleft sentences can also be found in philosophical essays (which stress similarities and discrepancies between various theories) and in articles which describe distinguished people whose qualities and achievements deserve special mention.

Due to their rare usage and basically foreign structure, their emphatic load is comparatively greater than that of typical Polish sentences.

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cases the focus of a pseudo-cleft sentence is formed by deleting from it the verb phrase, identical with that of the initial relative clause. What remains is the demonstrative particle *to* and the cleaved element.

Both English and Polish sentences under discussion may open with a head-(pro)noun, or — in English — with a wh-relative clause (headless). As has already been pointed out, it is difficult — if not impossible — to find a proper head-form for certain initial relative clauses of English pseudo-cleft sentences. This fact led Chomsky (quoted by Akmajian 1969: 15) to derive pseudo-cleft sentences from the underlying structure of the type

[It (John bought something)] (—→ What *John bought*)...

rather than view them as the products of reduction of the head-form. In this way he is able to account for the formation of cleft sentences as well. Polish, however, lacks headless expansive relative clauses and the sentences given below have to be rejected as ungrammatical:

99) Who Nixon chose was Agnew.
100) *Kogo Nixon wybrał, to Agnew.
100a) *Którego Nixon wybrał, to Agnew.

The pronouns *kogo* and *który* must define some (pro)nouns which refer to the elements placed in the focus. When left alone in the initial position, devoid of demonstrative abilities, they can neither point to anything nor define anything. However, sentences that cleave out complements do not require a (pro)nominal head at the beginning of the relative clause.

There are some agreement patterns to be found in pseudo-cleft sentences in Polish and English. English copula, for instance, is systematically the third person singular or plural[10], which is in accord with the form of the head pronoun of the initial relative clause. In those Polish pseudo-cleft sentences which cleave out subjects, the copula must agree in number and person with the abstracted element (i.e. subject) and the head of the relative clause which points to the focus. In sentences that cleave out objects the problem looks different. In the sentences which contain the copula — in various person forms the third form is the most likely to be used. The part of the sentence which follows it must have the nominative case. When the copula is not preceded by *to*, the head pronoun/noun puts on the instrumental, since the whole relative clause becomes a predicate. It is evident when the subject is shifted to the front position of the sentence.

101) Nie jestem tym, kto by się nadawał do roboty.
102) Ona jest tą, którą skrytykowano najostrzej.

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[10] It is not a fast and fixed rule. Akmajian (1969) checked his examples of cleft and pseudo-cleft sentences with the speakers of three different dialects, noting a number of differences among them. The majority of the sentences he gives are taken from his own dialect and certain regularities existing within those sentences refer to this particular dialect.

Reflexive pronouns in English pseudo-cleft sentences have the third person form (singular or plural) which agrees with the head (pro)noun. This agreement is of no significance in Polish, as the only existent reflexive pronoun is *się*.

English pseudo-cleft sentences permit the abstraction of the constituents other than subject and object. Cleaving may be rendered by means of headless relative clauses or those containing some kind of a head-form, though the latter are more problematic. In Polish the only way of emphasizing adverbials is by placing them at the beginning of the sentence or/and inserting such emphatic words as *właśnie*, *to właśnie*, *przecież*, and others. They may also be left in their original positions preceded by the above-mentioned words.

103) The place where I saw John was Boston.

104) *Miejscem, $\left\{\begin{array}{l}\text{w którym}\\ \text{gdzie}\end{array}\right\}$ widziałem Jana był Boston.

104a) Widziałam Jana *właśnie* w Bostonie.

105) The time when I met John was 5 o'clock.

106) *Czas, w którym spotkałam Jana. to piąta godzina.

106a) *Kiedy spotkałam Jana to o piątej.

106b) Spotkałam Jana *właśnie* o piątej.

Thus the range of the elements permitted in the focus of the English pseudo-cleft sentences and the corresponding Polish constructions varies. English admits of nominal phrases, adverbials and verbal complements (in the form of nominalizations), sentences with the head-noun "fact", or, occasionally, infinitives. Polish accepts nominals, subordinate clauses and sometimes infinitives (*Czego nie mogę zrobić, to napisać listu*).

The constraints imposed on the elements available for cleaving are similar in the discussed languages. Thus, it is impossible to isolate any internal constituent of the noun phrase (possessives, prepositional phrases, etc.). English expletive constructions cannot be pseudo-clefted. The same holds true of some Polish sentences that correspond to them, mainly those that lack subjects and start with the copula verb. Sentences containing only a verb have an implicit subject and are available for cleaving.

107) It is raining. *What is raining is it.

108) Pada (deszcz/śnieg). To, co pada, to deszcz/śnieg.

but: It is cold. → *What is cold is it.
Jest zimno. → *Co jest zimno, to...

In Polish prepositional phrases can appear in the focus with a simultaneous usage of the identical preposition at the beginning of the sentence before a relative pronoun; prepositions may also appear initially only.

109) What I was speaking about, was the war.

110) *O czym* mówiłam, *to o* wojnie. *To, o czym* mówiłam, *to* wojna.

In English indirect objects cannot be pseudo-clefted, unless preceded

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POLISH "SAM" AND ITS ENGLISH EQUIVALENTS

MAGDALENA JAKÓBCZYK-RAKOWSKA

Adam Mickiewicz University, Poznań

1.1. The Polish word SAM, often called a demonstrative pronoun (cf. Szober 1962) covers also other functions and corresponds to several English words, such as:

1. VERY, RIGHT (in the meaning of "exacting")
2. ALONE, BY ONESELF (meaning: with no company)
3. NOTHING BUT (without company of other objects or adjuncts or accumulated to a greater extent)
4. VERY (giving the exact reason)

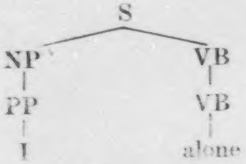
1.2. The division suggested in the paper (partially based on the notion of syntagmatic position (cf. Karolak 1963) will be roughly as follows:

(1) ALONE as in
  a. I am alone — Jestem sam
  b. I can go alone — Mogę iść sam
(2) BY HIMSELF as in
  He did it by himself — Zrobił to sam
(3) ONESELF as in
  I like it myself — Sama to lubię
(4) ONLY as in
  There were only girls — Były tam same dziewczyny
(5) VERY, RIGHT, NOTHING BUT as in
  at the very beginning — na samym początku
  right in the middle — w samym środku
  There was nothing — Były tam same
  but blank empty puste kartki
  sheets of paper. papieru.

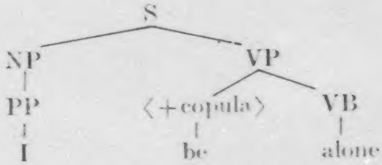
2.1. In our discussion of English equivalents of the Polish word SAM to be dealt with, we will start with the word ALONE occurring as in the examples:

Sometimes I think I'd be better *alone*.
I czasem myślę, że wołałbym być *sam*. (G)
You oughtn't be *alone*.
Nie powinieneś być *sam*. (G)
He grew bold and spoke to a woman who sat *alone* on a park bench.
Zdobył się na odwagę i przemówił do kobiety, która siedziała *sama* na ławce. (SA)
I should prefer to be *alone*.
Wolałabym być *sama*. (SM)

The sentence *I am alone* has roughly the following deep structure:



which, after applying copula transformation (Jacobs and Rosenbaum 1968: 101), yields:



The structure may be compared with:

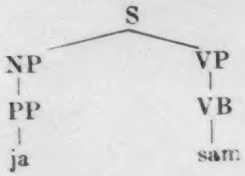
(1) I am quite $\left\{\begin{matrix}\text{heavy}\\ \text{happy}\\ \text{pretty}\\ \textbf{ALONE}\end{matrix}\right\}$

on the one hand and with:

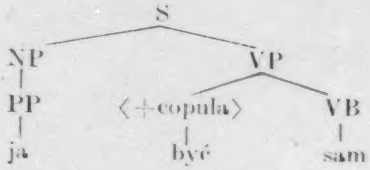
(2) I can go $\left\{\begin{matrix}\text{with Alice}\\ \text{with my dog}\\ \textbf{ALONE}\end{matrix}\right\}$ (quickly) (today)

on the other.

2.2. Similar situation may be observed while analysing Polish SAM:



and, after applying copula transformation:



Similarly:

(1) Jestem bardzo $\begin{Bmatrix}\text{ciężki}\\ \text{szczęśliwy}\\ \text{ładny}\\ \text{SAM}\end{Bmatrix}$

SAM occupies here, as ALONE in English (1) above, the same syntagmatic position as other predicates quoted.

In

(2) Mogę iść dzisiaj szybko $\begin{Bmatrix}\text{z Alą}\\ \text{z psem}\\ \text{SAM}\end{Bmatrix}$

however, the syntagmatic position occupied by SAM (or ALONE in English examples) is that of CONCOMITAVE, i.e., a subtype of circumstance as opposed to an adverbial (of time, manner, etc.). SAM and *z Alą* cannot co-occur and this is a condition for regarding them as one functional unit of the language, different from (1) (cf. Karolak 1963 : 139: „Stwierdzenie różnicy pozycyjnej dwóch składników może być, jak się wydaje, dostatecznie pewną podstawą do uznania ich za dwie różne jednostki funkcjonalne danego języka").

In both languages *happy* – ALONE do co-occur, which does not prove that the division based on syntagmatic position is not valid. ALONE (SAM) co-occurring with *happy* (szczęśliwy) as in:

Jestem szczęśliwy SAM.
I am happy ALONE.

is ALONE (SAM) — a different lexical item, the one that belongs to the category CONCOMITAVE, as:

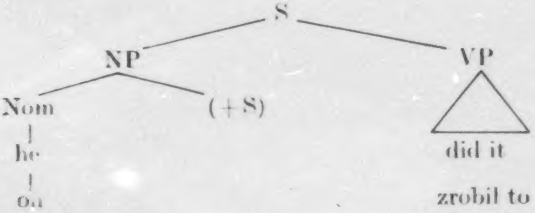
Jestem szczęśliwy z Alą.
I am happy with Alice.

2.3. Let us consider still another usage of the word SAM and its English equivalent BY HIMSELF (HERSELF, etc.) as in the sentence:

Zrobił to *sam*.

He did it (by) *himself*.

The example suggests that SAM being a concomitave is attributive to the NP:



S — he is alone
S — on jest sam

It is introduced transformationally, the embedded sentences being of the form:

Nom+be+Pred

Apparently, this holds true of the two languages. In English, however, a slight stylistic variation may occur, namely it may appear with or without BY, e.g.

Why can't you write *yourself*?

Dlaczego nie napiszesz *sam*? (SM)

meaning: with no help and not "personally".

3.1. Polish SAM may also emphasize NP, thus changing slightly its meaning, as in the following examples:

(1)

Sama to lubię.

I like it *myself*. (G)

meaning: ja *też* to lubię. (I also like it)

Sama mam ochotę na kieliszek.

I'm going to have a drink *myself*. (RL)

meaning: ja *też* mam ochotę (I am also going to...)

(2)

Sam wydawca je do mnie przysłał.

The publisher sent them to me *himself*. (SM)

Sama mi odpowiedziała.

She gave me the answer *herself*. (SM)

meaning: personally.

(3)

On *sam* jest Lutkins.

He's Lutkins *himself*. (SA)

Sam jesteś złodziej!

You are a thief *yourself*!

meaning: *to przede wszystkim ty* (it's mostly you) while accusing someone and/or being accused of something. It is to be understood as: it is not only me to be accused or blamed, your fault is at least as big as mine.

4.1. In the examples below Polish SAME, SAMI stand for TYLKO (ONLY):

Były tam (tylko) *same* dziewczyny.

There were *only* girls.

In this meaning, however, it appears mostly in plural, e.g.

Rosły tam *same* czerwone kwiaty.

Sami wysocy mężczyźni.

whereas:

*Rósł tam sam czerwony kwiat.

*Był tam sam wysoki mężczyzna.

sound if not ungrammatical, then unacceptable, at least in this meaning. (KWIAT, for instance, can also denote collectivum, as FISH in English and RYBA in Polish).

4.2. When comparing the above sentences with their English equivalents:

Only red flowers grew there.

Only tall men.

Only a red flower grew there.

There was *only* a tall man.

the difference becomes apparent. The "only" of English sentences can be translated into Polish as "tylko" in either singular or plural. Note that whereas in singular Polish "tylko" has only one equivalent in English, namely "only", in plural or collectivum we can have three possibilities:

a. *same* (sami, samo)

Były *same* stare bułki.

Zostało *samo* stare pieczywo.

b. *tylko*

Były *tylko* stare bułki.

Zostało *tylko* stare pieczywo.

c. *tylko* $\begin{Bmatrix} \textit{same} \\ \textit{sami} \\ \textit{samo} \end{Bmatrix}$

Były *tylko same* stare bułki.

Zostało *tylko samo* stare pieczywo.

4.3. Polish SAME (TYLKO) may be expressed in English not only by means of ONLY but also NOTHING BUT as in the examples:

Na biurku leżały *same tylko* puste kartki.

There was *nothing but* blank empty sheets of paper.

Została *sama* wódka.

There is *nothing but* vodka left.

5.1. Let us consider very briefly still another usage of Polish SAM, as in the constructions:

Był pozostawiony *sam sobie*.

He was left {(all) to himself / on his own.

Sam sobie jesteś winien.

It's your *own* fault.

Mów *sam za siebie*.

Speak for *yourself*.

Mówił *sam do siebie*.

He talked to *himself*.

Walczyli *sami ze sobą*.

They fought with *themselves* (or: they fought among themselves, depending on the meaning).

This is another usage of SAM (rather colloquial) which is not translated into English. The constructions seem to be almost idiomatic, the only English idiomatic equivalent being: "your own fault".

5.2. The examples given above do not exhaust all the possibilities of expressing Polish SAM in its various meanings. The most frequent functions are the following: expressing exactness, limiting, and underlying extremes, e.g.

On jest tyle wart za *sam* wygląd.

It's worth that for the looks *alone*. (G)

Sześć strzałów wpakował *w sam środek* tarczy.

He put six shots *inside* the bull. (G)

Na *samym* końcu.

At the *very end*.

Od *samego początku* chciał pisać.

From *the very beginning* he wanted to write.

W *samym* środku.

Right in the middle.

5.3. CONCLUSIONS

The obvious and revealing common features conclusions that may be drawn from the above considerations are the following:

a. both Polish SAM and its English equivalent ALONE may be used as predicates, introduced by means of copula transformation

b. they may both occur in the syntagmatic position occupied by concomitave

c. both SAM and its other equivalent HIMSELF (herself, etc.) when used as a concomitave are attributive to the NP and are introduced transformationally.

ABBREVIATIONS

a. *authors*

G — Graham Greene, transl. by Hanna Olędzka
RL — Ring Lardner
SA — Sharwood Anderson
SM — Somerset Maugham

all other examples and translations come from the author.

b. *symbols*

S — sentence
NP — noun phrase
VP — verb phrase
VB — verbal
PP — personal pronoun

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CAUSATIVE CONSTRUCTIONS IN ENGLISH AND POLISH. A CONTRASTIVE STUDY

TERESA OLSZEWSKA

Maria Curie-Skłodowska University, Lublin

1. INTRODUCTION

1.1. Causative constructions are illustrated in most standard English grammar books, but they have been given detailed treatment only in very recent literature (Lyons 1968, Lakoff 1970, Chafe 1970, Hutchins 1971, Fodor 1970, Anderson 1971, etc.). Polish causative verbs have been discussed by Grzegorczykowa (1967; 1969), but standard grammars have given them very little (Szober 1969 : 56) or no attention.

The term "causative", once restricted in reference to an old morphological category present in some transitive verbs, as for instance, English *lay* v. *lie*, *set* v. *sit*, Polish *poić* (=cause to drink) v. *pić* (=drink), *morzyć* (=cause to die) v. *mrzeć* (=die), etc., in recent literature is used with respect to a variety of surface representations covering the semantic area:

(a) someone makes (lets, causes) somebody (to) do something,

(b) someone makes (lets, causes) something/somebody (to) change or accept certain state,

also, less typically, with some inanimate non-agentive subjects expressing an "external causer"[1]:

(c) something makes (lets, causes) somebody (to) do something,

(d) something makes (lets, causes) something/somebody (to) change or accept certain state.

1.2. In both English and Polish most of the old morphological patterns of causative verb formation by means of prefixation and suffixation are no longer productive, as they are, for instance, in Turkish (cf. Lyons 1968: 8.2.4), or can be illustrated by some OE verbs (cf. Jespersen 1927: 16.5.1). The two languages employ a number of constructions conveying the idea of "causativity". For instance, causative analysis has been frequently suggested to account for the structural relations between transitive and intrasitive constructions with "ergative"[2] verbs, as illustrated by the following pair of sentences:

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[1] In Fillmore (1968), for example, the subjects in

(a) *The key opened the door*

(b) *The wind opened the door*

are treated as surface representations of underlying instrumental cases. Whereas sentence (a) presupposes some unexpressed agentive participant, (b) does not. It seems that "the wind" can be treated as syntactically equivalent to other agentive, typically animate subjects of causative verbs. Similar examples are: *The frost has killed the flowers* or *The explosion rocks the trees*.

I. (a) *He opened the door*
(b) *The door opened.*

where sentence (a) is interpreted as derived from (b) by means of a causative operation introducing an "agentive" subject and converting the intransitive form into a transitive one:

He CAUSED$_s$[The door opened]$_s \Rightarrow$ He opened the door

The causative "link" can also by realized as a "causative auxiliary", such as *make, have, get, cause* (*sprawić, czynić, powodować*) in "overtly" causative constructions, e.g.,

II. *That makes me feel better* (=To *sprawia, że się lepiej czuję*)

According to the assumptions made by some proponents of the "semantically based" model of transformational grammar (cf., for instance, Anderson 1971), the causative feature is also present in the underlying representations of some traditionally "intransitive" verbs (e.g. *John moved*), clauses with the object of result (e. g. *John painted a picture*) or in sentences with subordinate nominal clauses (e.g. *They elected him president*).

1.3. The aim of the present paper is to examine the causative constructions in English and Polish with the objective of establishing relevant correspondences and localizing possible places of contrast. The difficulties met at this point result from the lack of even a fairly adequate description of this area of Polish grammar. Consequently, the following considerations will partly constitute an attempt to fill up some of the gaps before a contrastive analysis is carried out.

It will be beyond the scope of the present study to attempt a comprehensive descriptions of the causative constructions in terms of the deep structure relations. In the following sections we will select for examination only a few areas which seem to provide material for the most essential contrasts.

1.4. In current English literature there have been two main approaches to the presentation of causative constructions. On the one hand, they have been analysed in terms of configurational relations (of deeper, more abstract subject and object elements), on the other hand, they have been expressed more directly in terms of "labelled" (or "case") relations. In the present paper most of the material will be handled, somewhat informally, by the configurational mechanism (along the lines proposed by Lakoff (1970 : 5. 16), Lyons (1968: 8.3.6); Anderson (1971))[3]. Fundamental to the argument is the suggestion that lexicalization takes place after the operation of at least some transformational rules, lexical items being substituted for syntactically structured complexes of semantic features. The various surface representations of the causative constructions will be interpreted as derived from the structure where an intransitive clause is embedded as object of a matrix sentence, whose verb is an abstract causative.

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[2] For a discussion of "ergative" constructions see, for instance, Lyons (1968: 350-371) or Gołąb (1958). The term "ergative" is used in a related, but somewhat different sense in a number of recent publications referred to in the present paper.

2. CAUSATIVE CONSTRUCTIONS IN ENGLISH

2.1. Causative verbs.

2.1.1. Causative verbs constitute a large part of generally two-place, seldom three-place transitive verbs. The difference between causative verbs (exemplified by *kill* in the following examples) and "simple transitive" (e.g. *see*) is indicated by the question-answer frames:

III. (a) *John killed the animal*
(b) *John saw the animal*
What did John do to the animal? — {*He killed it*
{**He saw it.*

With verbs like *kill, spoil, move, lift, thicken, enrich*, etc., some sort of "change of state" in the object, in its "physical or mental condition", or its "physical or abstract location" (Anderson 1971 : 64), is a consequence of the action denoted by the verb, whereas verbs like *see* or *read* do not carry such implications. Transitive verbs of "kill-move" type will be called "causative verbs".

2.1.2. It is assumed that causative verbs are derivable from one-place intransitive constructions by means of a causative operation, which has the effect of embedding a one-place nucleus into a matrix sentence with an abstract causative verb, and combining the predicate element of the embedded clause with that of a higher clause. (In recent literature the term "conflation" is used with regard to the operation combining the specifications of two verbs into one simple lexical item (cf. Anderson 1971: 176)). Thus, transitive verbs like *move*, *open*, *kill* have been derived from "*move* (intr.)+caus", "*die*+caus", "*open* (intr.)+caus", respectively.

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[3] The validity of the abstract causative mechanism has recently been questioned by Fodor (1970). However, this raises a more general question of the validity of the generative semantics version of transformational theory, which is not my intention to discuss here.

One-place intransitive verbs in the embedded sentences can be classified according to their potentiality of combination with "agentive" or "non-agentive" nominals (cf. Lyons 1968: 383). For instance *jump*, *sing*, *come* take an agentive subject, *die*, *fall*—non-agentive, and *move* either agentive or non-agentive (cf. *John moved* v. *The stone moved*). Causative verbs are typically derived from embedded sentences with non-agentive nominals, rarely from nuclei with agentive subjects.

When the subject of the embedded sentence is agentive, there are two possibilities:

— a) if the verb is one of a small class of English verbs occurring also in transitive constructions with agentive objects (e.g. *march*, *walk*, *run*, *jump*, *gallop*, etc.), the causative operation produces a "conflated" verb, e.g.,

IV. 1. (a) *The prisoners marched* : (b) *They marched the prisoners* —
They CAUSED $_s$[*The prisoners marched*]$_s$
2. (a) *My dog was walking* : (b) *I was walking my dog*
3. (a) *The horse jumped* : (b) *John jumped the horse*, etc.

— b) in the majority of instances, however, the combination of a causative verb in the matrix sentence and the agentive subject in the embedded clause will "trigger off" the application of rules for the productive "non-conflated", "overtly causative" constructions with the auxiliary verbs *make*, *get*, *have*, *cause*, e.g.,

V. 1. (a) *John sings* : (b) *Bill makes John sing*
2. (a) *The doctor came* : (b) *Bill got the doctor to come*
3. (a) *He left* : (b) *We had him leave*

For a discussion of "overtly" causative constructions see 2.2. of the present paper.

2.1.3. Causative verbs in English fall into several subclasses according to their surface representations. Some of them are morphologically related to intransitive verbs from which they have been derived, others display different lexicalizations. Compare the following examples:

$S_{\text{non-agentive}}$ $V_{\text{intr.}}$ S_{ag}-V_{tr}-$O_{\text{(non-agentive)}}$

VI. 1. (a) *The tree has fallen* : *Someone has felled the tree*
(b) *The rope was slack* : *John slackened the rope*
(c) *The metal was solid* : *Bill solidified the metal*
2. (a) *The door opened* : *John opened the door*
(b) *The road became narrower* : *They narrowed the road*

3. (a) *Bill died* : *John killed Bill*
(b) *The book fell* : *Susan dropped the book*
4. — : *They damaged the table*

Class 1 illustrates causative verbs derived from their intransitive equivalents by certain morphological processes, class 2 exemplifies the group of verbs performing both transitive and intransitive roles without a change of forms, class 3 represents verbs with different "lexicalizations" in intransitive and transitive functions, class 4—causative verbs without notionally obvious intransitive equivalents. All these classes will be discussed in greater detail in the following sections (2.1.4 - 2.1.7).

2.1.4. Causative verbs of class 1 are morphologically related to their intransitive equivalents. Sentence VI. 1. (a) illustrates a group of old causatives derived (from the historical point of view) from intransitive verbs by what were once more or less productive morphological processes (cf. Jespersen 1927: 16.5.1; 16.7) However, most of the old morphological causatives have disappeared, only a few are left comparatively intact in Modern English, e.g. *lay* : *lie*, *set* : *sit*.

There do occur in English what might appear to be productive causative prefixes or suffixes, as those in *enrich*, *soften*, *intensify*, *legalize*, etc. Two of them, *-en* and *-fy*, typically occur with causatives corresponding to intransitive "verbal adjectives", e.g.

harden : *hard*
loosen : *loose*
thicken : *thick*
solidify : *solid*, etc.

However, the same forms are found with the simple intransitive verbs — "inchoative"[4] equivalents of the causatives, cf.

VII. (a) *The metal was hard* (*solid*).
(b) *The metal hardened* (*solidified*) (=*became hard/solid*).
(c) *John hardened* (*solidified*) *the metal* (=*made it hard/solid*).

This suggests that *-en* and *-fy* are verbalizing suffixes and not specifically causative. It should also be noted that the formation of both causatives and inchoatives by means of *-en*, *-fy* suffixation is no longer a productive process and it does not generally apply to adjectives, only to exceptional ones. The following examples (quoted after Lakoff 1970: 40) make it clear:

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[4]) The term is used to denote verbs expressing "the beginning of an action" (cf. Jespersen 1927 : 16. 7.) In the configurational approach inchoative verbs are derived from the intransitive object sentences, embedded in matrix sentences with the abstract "inchoative" verb: *become*, *get*.

	adjective	inchoative verb	causative verb
	hard	*harden*	*harden*
	loose	*loosen*	*loosen*
	red	*redden*	*redden*
but:	*sharp*	**sharpen*	*sharpen*
	fat	**fatten*	**fatten*
	green	**greenen*	**greenen*

The only quasi-productive causative suffix is *-ize*, added particularly to "adjectives" or nouns, e.g. *legalize*, *characterize*, *actualize*, *computerize*, *synthetize*. However, it also occurs in inchoatives, as in *materialize*.

2.1.5. Class 2 contains verbs used in intransitive and transitive functions without a change of form. Other members of this class are *change*, *grow*, *develop*, *open*, *move*, *close*, *start*, *begin*, *break*, *crack*, *split*, *tear*, etc., the "move—and—change class verbs" (cf. Jespersen 1927: 16.4.1). Such causative verbs can be described as derived from the corresponding intransitive verbs (identical in phonological form) by means of a morphological process of "zero modification" (cf. Lyons 1968: 8. 2.8). Within the scope of this subclassification fall verbs of the "march—walk" type exemplified in (IV), and causative verbs derived through the same process from "adjectival verbs" (traditional adjectives). Thus, *She warms the milk* is related to *The milk is warm* in the same way as *They begin the play* is related to *The play begins*. Other verbs of this type are *cool*, *empty*, *fit*, *clear*, *weary*, etc. (cf. Jespersen 1927 : 16.5.1).

2.1.6. In some cases the presence of +causative is associated with a distinct lexical item in the two-place construction, e.g. *kill* : *die* (cf. VI. 3.). Then we speak of different lexicalizations of one verb, i.e. of its alternative, syntactically conditioned phonological realizations. The causative verb *kill* can be interpreted as lexical realization of "*die* +caus", *drop* as derived from "*fall*+caus". It is necessary to allow for widespread suppletion if semantic representations are to be matched with appropriate paradigms of surface forms.

According to these assumptions also some three-place verbs (i.e. combining with three nominals) can be interpreted as derived from two-place constructions by means of the operation of causativity (cf. Lyons 1968: 8.2.14). Thus, *give* may be regarded as the lexicalized causative of *have*:

John gives the book to Mary⇐*John* CAUSES ${}_{s}[$*Mary has the book*$]_{s}$ where the subject of the underlying two-place nucleus is transformed into an indirect object with the three-place causative verb. Similarly, *show* can be intrepreted as the three-place causative of *see*:

John shows the book to Mary⇐*John* CAUSES ${}_{s}[$*Mary sees the book*$]_{s}$
Notice also verbs like *persuade*, presumably derived from the two-place "believe" with a sentential nominal as its object (cf. Lakoff 1970 : 10.1), e.g.,

John persuaded Harry that Bill left ⇐
John CAUSED ${}_{s}[$*Harry believed* ${}_{s}[$*Bill left*$]_{s}]_{s}$

2.1.7. Finally, according to the assumptions adopted in the present paper (cf. 2.1.1), causative verbs must include a class of transitive verbs which have no notionally obvious intransitive equivalents, but imply some sort of "change of state" in the object, e.g., *dismantle, ruin, damage, repair*, etc.

Notionally, it would not seem unreasonable to apply the causative interpretation to some traditionally "intransitive" verbs (e.g. *John moved* corresponding to a causative structure with a reflexive object *John moved himself*), and verbs with the object of result (e.g. *John painted a picture*). However, further consideration of these structures would introduce additional complications.

2.2. "Complex" causative constructions.

2.2.1. In some causative constructions the underlying representations are not matched by "simple" lexical items in the surface structure (e.g., *cause to be responsible, cause to leave*, etc.). In such causes the causative "link" is realized as one of the causative auxiliaries *make, have, get, cause* occurring in "complex" overtly causative patterns, e.g.,

VIII. 1. *John made Bill responsible (for it)* : *Bill was responsible (for it)*
2. *John made Bill leave*
John had Bill leave
John got Bill to leave
John caused Bill to leave } : *Bill left*

The rules for the overtly causative constructions apply to one-place nuclei both with agentive (cf. VIII. 2) and non-agentive (cf. VIII. 1.) subjects. It should be noticed, however, that while a large part of verbs combining with non-agentive nominals are parallelled by simple causative equivalents (cf. sections 2.1.3 - 2.1.6 of the present paper), verbs with agentive subjects in subordinate clauses generally require the application of rules for the productive "complex" construction (unless the verb is one of the "walk-march" type, cf. 2.1.2)

Examples:

IX. 1. *The teacher made the boys stand up*
2. *John had a doctor come*
3. *I got him to leave*

In some cases "conflation" may be optional and the transitive operation may derive either a simple or a complex variant without any clear semantic implications associated with either of them, cf.

X. (a) *John made the rope slacker*
(b) *John slackened the rope*

Notice, however, the two causative realizations with the subordinate nucleus *The dog is walking*:

XI. (a) *John is walking the dog*
(b) *John makes the dog walk*

which seem to be marked with respect to the direct (a) or indirect (b) agency of the subject (in (a) John is the direct agent of the action leading the dog himself, whereas (b) does not carry such implications).

2.2.2. The causative auxiliaries display some difference of distribution. For instance, there is a clear tendency for "make" to require an agentive subject in the subordinate clause, whereas no such restriction occurs in the case of "cause". "Cause" can also take a "that-clause" as its object; cf.:

XII. 1. He *made John sing*
2. (a) *He *made John die*
(b) *He *made John's death*
(c) He *caused John's death*
(d) He *caused that John died*

The overtly causative construction in English is indefinitely recursive, e.g. *Harry made Peter make Tom... make John kill Bill.*

Have and *get*, as opposed to *make*, in three-place causative constructions can take an alternative active or passive form of the subordinate two-place nucleus:

XIII. 1. (a) *John had Harry kill Peter*
(b) *John had Peter killed (by Harry)*
2. (a) *John got Harry to kill Peter*
(b) *John got Peter killed*
3. (a) *John made Harry kill Peter*
(b) **John made Peter killed*

It should be noted that *have* and *get* with the passive variant of a subordinate clause form a very productive pattern in Modern English, derived through double-causativization and implying an indirect agency on the part of the subject with respect to the action expressed by the two-place verb:

XIV. 1. *John got his watch repaired (by a watchmaker)*
2. *I must have my car fixed (by someone)*
3. *Susan had her dress made*
4. *He often has his shoes polished*
5. *I must have my house insured against fire*
6. *I must have my room cleaned.*
etc.

2.2.3. There is a class of verbs which should not escape attention in our considerations of causativity. These are "quasi-causative", more complex verbs, typically involving additional lexicalization of "speech" or "force" as an "instrument", e.g.,

XV. 1. *He persuaded them to leave*
2. *He dissuaded them from leaving*
3. *They requested the passengers to show their passports*

4. *They encouraged the students to read more*
5. *They allowed me to bring my dog into class*, etc.

Other verbs of this kind are: *tempt, warn, force, compel, invite oblige, press, advise, tell, order*, etc. However, a detailed discussion of the configurational structures these verbs enter or of their semantic representations will be beyond the scope of the present paper (for a suggestion of analysing *persuade, dissuade* cf. Lakoff 1970: 10.1).

3. CAUSATIVE CONSTRUCTIONS IN POLISH

3.0. The category of causativity in Polish underlies two typical surface realizations:

a) synthetic (conflated), expressed by a causative verb, e.g. *poić* (=cause to drink), *ruszyć* (=move), *bielić* (=whiten), *podłużyć* (=lengthen) *indywidualizować* (=individualize), etc.

b) analytic, with an auxiliary causative verb *powodować, sprawić, czynić*, and a subordinate object clause, e.g.,

XVI. 1. *Jan spowodował, że wyszliśmy wcześnie* (John caused that we left early)
2. *Śnieg powoduje, że góry są białe* (The snow causes that the mountains are white)

Causative constructions with the causative link *czynić* corresponding to English *make* (as in *to make something white*) are rare and frequently stylistically awkward, if not ungrammatical, e.g.,

XVII. 1. *Śnieg czyni góry białymi* (The snow makes the mountains white)
but:
2. **Ona czyni chatę białą* (She makes the cottage white)
as opposed to:
Ona bieli chatę (with a simple causative)

3.1. Causative verbs in Polish

3.1.0. Causative verbs in Polish are more numerous than in English owing to the variety of derivational verbalizing affixes, some of them still productive in the language. All causatives fall into several subclasses according to how they are related to the intransitive verbs from which they have been derived. As in English, there are:

1) "morphological" causatives, derived from their intransitive equivalents by (a) productive, (b) unproductive processes of prefixation and suffixation (including the process of "zero modification"),
2) lexicalized causatives, with (a) suppletive intransitive equivalents, (b) without any notionally obvious corresponding lexical items.

3.1.1. "Morphological" causatives form a large part of causative verbs. As in English, the old distinctive patterns of "causative — intransitive" pair formation are no longer productive and reflected only in a few cases (cf. Szober 1969: 56 - 57):

(1) *poić* (cause to drink) : *pić* (drink)
morzyć (cause to die) : *mrzeć* (die)
gnoić (cause to rot) : *gnić* (rot)
(b) *sadzać* (set) : *siedzieć* (sit)
stawiać (stand) : *stać* (stand)
łożyć (lay) : *leżeć* (lie)
wieszać (hang) : *wisieć* (hang)

3.1.2. Generally speaking, two suffixes in Polish, *-ić* and *-ować* (also a complex suffix *-izować* adopted from French on the basis of *-ować*), typically, though not exclusively, occur with causatives moprhologically related to their equivalent intransitive, mostly "adjectival" verbs. Of these suffixes the suffix *-ić* displays (historically) the greatest productivity, especially when combined with an appropriate prefix. In such combinations it is productive also in Modern Polish, the derivational pattern "*u — ić*" being the most frequent one (cf. Grzegorczykowa 1967: 5), e.g.

uaktywnić (to make more active) : *aktywny*
unaukowić (to make more scientific) : *naukowy*
unieszkodliwić (to make harmless) : *nieszkodliwy*
uszczęśliwić (to make happy) : *szczęśliwy*
uświadomić (to make aware) : *świadomy*,
etc.

Other prefixal-suffixal[5] arrangements deriving causative verbs are:

(na)-ić	*napełnić* (fill): *pełny* (full)
o - ić	*oślepić* (blind; make blind): *ślepy* (blind)
	ogłupić (stupify): *głupi* (stupid)
od - ić	*odświeżyć* (refresh) : *świeży* (fresh)
	odmłodzić (make younger) : *młody* (young)
po - ić	*polepszyć* (make better) : *lepszy* (better)
prze - ić	*przedłużyć* (make longer) : *długi* (long)
roz - ić	*rozwścieklić* (infuriate) : *wściekły* (furious)
wy - ić	*wydłużyć* (make longer) : *długi* (long)
z-(s-)-ić	*zwiększyć* (enlarge) : *większy* (longer)
za - ić	*zaznajomić* (acquaint) : *znajomy* (familiar)

In all these causatives mentioned above the occurrence of a prefix is obligatory, cf.

polepszyć : **lepszyć*
odmłodzić : **młodzić*

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[5] For a discussion of the distribution and semantic implications of verbal prefixes and suffixes cf. Grzegorczykowa (1969).

However, there is a group of causatives with "-ić" without prefixes, although such formations are less frequent and no longer productive in Modern Polish, e.g.

suszyć (dry) : *suchy* (dry)
bielić (whiten) : *biały* (white)
słodzić (sweeten) : *słodki* (sweet)
czernić (blacken) : *czarny* (black)
płaszczyć (flatten) : *płaski* (flat)
ciekawić (make curious) : *ciekawy* (curious),
etc.

A less common variant of the causative suffix is "-ować", present in some already lexicalized verbs derived from adjectives (e.g. *marnować* (waste), *(u-)radować* (to gladden), etc.), and quasi-productive in forming some denominative causative verbs, e.g.

(a) *proszkować* (to give the form of powder)
galaretowć (to give the form of jelly)
(b) *cukrować* (to convert into sugar)
koksować (to coke)
(c) *emerytować* (cause to retire)

Another quasi-productive suffix is "-izować", derived from loan-words and used in analogous formations, cf.

anglizować (to Anglicize)
amerykanizować (to Americanize)
legalizować (legalize).
etc.,

also, frequently in specialized terminology, e.g.

substantywizować (substantivize)
nominalizować (nominalize)
palatalizować (palatalize)

It should be noted, however, that all these suffixes (-ić, -ować, -izować), although regular in causative verbs, are by no means distinctive of this class (cf. (a) simple intransitive *skąpić* (stint): *skąpy*, *próżnować* (laze): *próżny*; (b) inchoative *materializować się* (materialize), etc.).

3.1.3. A group of causative verbs (corresponding to English "move and change" class) display the same phonological realizations as their intransitive equivalents. In the surface structure the opposition between the causative — intransitive pairs is marked by the presence of the "pseudo-reflexive" enclitic particle *się* occurring with the intransitive verbs, e.g.

otworzyć (open) : *otworzyć się* (open)
zacząć (begin) : *zacząć się* (begin)
zmienić (change) : *zmienić się* (change)
gotować (boil) : *gotować się* (boil), etc.

Notice however:

awansować (promote) : *awansować* (be promoted)

3.1.4. As in English some causative-intransitive pairs occur as quasi-suppletive forms,

e.g. *zabić* (kill) : *umrzeć* (die)
prowadzić (lead) : *iść* (go),
etc.

There are also causative verbs not parallelled by notionally obvious lexical intransitive equivalents, e.g.

reperować (repair), *rujnować* (ruin), etc.

3.2. "Complex" causative constructions

3.2.1. Complex, overtly causative constructions, employing causative auxiliaries *powodować, sprawić, czynić*, occur both with agentive and non-agentive nominals in the embedded nuclei. However, they are particularly productive in the former cases since simple lexical items combining the specifications of intransitive verbs with agentive subjects, and the abstract causative of the matrix sentence, are rare in Polish (e.g. *poić, prowadzić*). Such combinations generally result in productive, overtly causative constructions, with subordinate object clauses in the surface representations, e.g.,

XVIII. 1. (a) *On sprawił, że wkrótce wyjechaliśmy*
(= He made us leave soon)
(b) *On spowodował, że wkrótce wyjechaliśmy*
(c) *On uczynił to, że wkrótce wyjechaliśmy*

Verbs with non-agentive subjects in embedded clauses are generally parallelled by simple causative verbs in the surface structure. In some cases "conflation" is obligatory (cf. XVII. 2. or XIX. 1.), in other cases it is preferable to the other variant if both are possible (cf. XIX. 2, 3). There are also instances where the complex construction is the only possible realization of the underlying structure (XIX. 4).

Examples:

XIX. 1. (a) *Dziewczyna sprzątnęła pokój* (The girl cleaned the room)
(b) ***Dziewczyna uczyniła pokój czystym***
2. (a) *Kobieta uśpiła dziecko* (The woman put the child to sleep)
(b) *Kobieta sprawiła, że dziecko usnęło*
3. (a) *Chcieliśmy uaktywnić ludzi we wsi* (We wanted to make people in the village active)
(b) *Chcieliśmy uczynić ludzi we wsi aktywnymi*
4. *Zrobili Jana odpowiedzialnym za to* (They made John responsible for it)

It seems that even in the case of option the occurrence of a simple or complex causative may be associated with some semantic implications. Sentences XIX. 2. (a) and XIX. 2. (b) seem to be marked as to the direct or indirect agency of their subjects. Compare also:

XX. (a) *Jan położył książkę na stole* (John put the book on the table)
(b) *Jan spowodował, sprawił, że książka leży na stole*
(John caused that the book was on the table)

Causative auxiliaries display some differences of distribution. All of them can be followed by subordinate object clauses in the surface structure (cf. XVIII), however, *powodować* can additionally take a nominalized sentential as an object, for instance:

Jan spowodował śmierć Henryka (John caused Henry's death)

Czynić, corresponding to English *make*, as in *to make somebody responsible*, occurs in a formally equivalent Polish construction, e.g. *czynić kogoś odpowiedzialnym* (cf. also XIX. 3. (b)).

3.2.3. It should be noticed, however, that causative auxiliaries are generally avoided in Polish. Polish makes more frequent use of "complex lexicalized quasi-causative" verbs with various additional semantic implications, typically involving lexicalization of "speech" or "force" as an instrument, e.g. (a) *kazać* (order), *rozkazywać* (command), *zabraniać* (forbid), *polecić* (tell), *radzić* (advise), *pozwalać* (allow), etc., and, (b) *skłonić* (induce), *namówić* (persuade), *zmusić* (force), etc. (for a list of these verbs cf. Gołąb 1967: 32 - 38, Grzegorczykowa 1967: 125). Verbs of group (a) combine in the surface structure with infinitives, dependent object clauses, or, less frequently, with verbal substantives; verbs of group (b) are followed by prepositional verbal substantives or subordinate object clauses, e.g.,

XXI. 1. (a) *On kazał mi przyjść* (He ordered me to come)
(b) *On kazał, żebym przyszła*
2. (a) *Generał nakazał armii wycofać się* (The general ordered the army to withdraw)
(b) *Generał nakazał armii wycofanie się*
(c) *Generał nakazał, by armia się wycofała*
3. (a) *Namówiliśmy ich do pójścia z nami* (we persuaded them to go with us)
(b) *Namówiliśmy ich, żeby poszli z nami*

3.2.4. The causative operation in Polish is also a recursive rule, as illustrated by

XXII. *Muszę sprawić, aby Jan spowodował, aby ktoś sprzątnął mój pokój*
(I must make John get somebody to clean my room)

The above sentence has been derived via triple causativization. It should be noticed, however, that sentences derived through the process of multiple causativization rarely employ causative auxiliaries in Polish. Compare the following examples:

XXIII. 1. *Muszę postarać się, aby ktoś sprzątnął pokój* (I must have someone clean my room)

2. *Pomalowaliśmy nasz dom w tym roku* (ambiguous sentence:
   (a) We have had our house painted this year
   (b) We have painted our house this year)
3. *Obcięłam sobie krótko włosy* (ambiguity:
   (a) I have had my hair cut short
   (b) I have cut my hair short)
4. *Musimy ubezpieczyć dom od ognia* (We must have our house insured against fire)

All these sentences have been derived through the operation of double-causativization, and they express indirect agency on the part of the surface structure subject with regard to the action denoted by the two-place verb of the embedded nucleus (cf. corresponding English constructions discussed in 2.2.2.). In sentence XXIII. 1. the overtly causative construction with the auxiliary verb is obligatory, since *Muszę sprzątnąć pokój* (I must clean my room) presupposes direct agency of the subject. Sentences XXIII. 2. and 3. are ambiguous: their subjects can be interpreted as either directly or indirectly agentive in relation to the actions expressed by the verbs. Finally, sentence XXIII. 4. is explicitly unambiguous, presupposing an agency different from the one expressed by the surface structure subject. It should be emphasized that constructions illustrated in XXIII. 2, 3, 4 are very frequent surface structure realizations of causative constructions in Polish.

Another complex causative construction implying indirect agency of the subject with regard to the surface structure verb predicate is a combination of the verb "dać" (give) with an infinitive (of a limited number of verbs denoting various services), alternating with a verbal substantive accompanied by a preposition (cf. Grzegorczykowa 1967: 130 - 131), e.g.

dać znać // podać do wiadomości (=let know)
dać uprać (ubranie) // dać ubranie do prania (=to have clothes washed)
dać uszyć (sukienkę) // dać sukienkę do szycia (=to have a dress made)
dać zreperować (zegarek) // dać zegarek do reperacji (=to have a watch repaired)

The verb "dać", apart from its occurrence in "dać znać", combines the meaning of a causative with the basic meaning of the word "give". Hence alternative constructions where the direct agent is expressed: "dać ubranie do praczki, dać sukienkę do krawcowej, dać zegarek do zegarmistrza, dać buty do szewca", etc.

4. COMPARISON

4.0. Causative constructions in English and Polish are basically comparable, frequently equivalent with respect to the ways of lexicalization and formal arrangements. Causative operation in the two languages derives simple causative verbs as well as complex causative structures. Generally speaking, complex structures are productive in the two languages, whereas morphological patterns of derivation display extremely limited productivity, particularly in English.

4.1. Causative verbs in English and Polish show considerable lexical equivalence. However, Polish causative verbs are more numerous than English. Consequently, some simple causatives in Polish are parallelled by complex causative constructions in English, e.g.

rozśmieszyć kogoś = to make sb laugh
zaciekawić kogoś = to make sb curious
odmłodzić kogoś = to make sb younger

For some other examples cf. 3.1.2.

As regards simple causative verbs in English and Polish certain regularities can be observed in the correspondences of the morphological patterns of derivation. For instance, the "move and change" class verbs in both English and Polish form their causative equivalents by means of the process of "zero modification" (cf. 2.1.5. and 3.1.3.). The verbalizing suffixes "-en", "fy" in English are frequently parallelled by the Polish suffix "-ić" combined with an appropriate prefix (cf. 2.1.4. and 3.1.2.). The quasi-productive suffix "-ize" ("-izować") commonly applies to equivalent lexical items in the two languages (cf. 2.1.4 and 3.1.2.). It should be stated, however, that such correspondences are only typical but not obligatory, cf.

czernić : *blacken* (-ić : -en)
zielenić : *to make green* (**greenen*) (-ić : complex caus.)
oślepić : *to blind, to make blind* (**blinden*) (-ić : zero suffix)

4.2. Some most essential contrasts brought out in the analysis concern English and Polish complex causative constructions, displaying certain formal dissimilarities in their surface realization. English makes an abundant use of the productive pattern with the auxiliary verbs *make, get, have* and a "reduced" embedded sentence, i.e., *to make somebody do something*. This pattern is formally parallelled by Polish *sprawić, że ktoś coś robi*, where the causative auxiliary takes a subordinate object clause (cf. 2.2.1 and 3.2.1), e.g.

XXIV. *He made us go out* (*On sprawił, że wyszliśmy*)

It should be noted, however, that these semantic equivalents differ in respect of their stylistic value. Sentences with causative auxiliaries in Polish are frequently stylistically awkward, and a tendency can be observed in Polish to render the English causative auxiliaries by lexicalized complex causative verbs involving various semantic implications (cf. 3.2.3). So, sentence XXIV will probably be parallelled by

On kazał nam wyjść (He made us go out, using speech as an instrument) or:

On zmusił nas do wyjścia (here the verb implies some kind of coercion).

Similarly:

XXV. 1. *The teacher makes the children work hard*
(a) *Nauczyciel każe dzieciom ciężko pracować*
(b) *Nauczyciel zmusza dzieci do ciężkiej pracy*
2. *They made us wait = Kazali nam czekać*
3. *He had a doctor come = Wezwał doktora*
(with a lexicalized causative = call)
4. *We must have this letter typed = Musimy kazać przepisać list.*
5. *He had Bill kill John = Namówił Billa do zabicia Jana; Kazał Billowi zabić Jana.*

See also some other examples expressing indirect agency in 3.2.4.

Using translation as a methodological tool it would be possible to provide various semantic equivalents of some causative sentences, e.g.,

XXVI. *He can't make the car go* :
(a) *On nie może uruchomić samochodu*
(b) *On nie może wprawić samochodu w ruch*
(c) *On nie może ruszyć samochodu (z miejsca)*, etc.

However, introducing such contrasts through translation equivalents can cause difficulties in establishing complete lists of possible correspondences.

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SOME OBSERVATIONS CONCERNING CLAUSES OF RESULT IN ENGLISH AND POLISH

ROMAN KALISZ

The University of Gdańsk

INTRODUCTION

0.0. The aim of the present paper is to propose a scheme for derivation of sentences exhibiting CAUSE and EFFECT relation and to distinguish unambiguously sentences containing clauses of result from other types of sentences which exhibit the above relation. Further sections will be concerned with sentences containing clauses of result in a more detailed way. The starting point for the analysis is the semantics of sentences exhibiting CAUSE and EFFECT relation.

1.1. Many contemporary linguists propose beginning sentence analysis with the semantic component (e.g. Fillmore 1971; Lakoff 1969; Chafe 1970; Wierzbicka 1969; Karolak 1972). The present paper presupposes general acceptance of generative semantic principles. The main assumption of the majority of representatives of generative semantics is that semantics and syntax are united in deep structure (Lakoff 1971; Gruber 1967). In such approaches there are no pure syntactic categories and syntax is considered a formalization of semantic description. Categorial items are both semantic and syntactic.

1.2. Clauses of result are distinguishable on the semantic level since result is a semantic, not a syntactic notion. The distinction between clauses of result and other types on a purely syntactic level is sometimes very difficult or even impossible:

1a. But then afterward you would step outside in the hall and laugh aloud a few times *so that* the neighbours in other rooms *could* think you both had just been playing around and it had all been a joke. (C. M. C. 109)

1b. They took to their heels *so that* you *couldn't* see'em for dust. (D. D. 48).

2a. Janek podszedł do drzwi i zapukał.

2b. Janek spadł z trzeciego piętra i zabił się.

Sentences 1a. and 1b. are structurally homonymous in the aspect relevant here. *So that* functions in both sentences as a conjoining indicator, and *could* follows that indicator in both (the existence of *would* in the clause before the conjoining indicator in sentence 1a. is irrelevant to the present discussion because the modal may be omitted and its omission would not result in ungrammaticality or change type of EFFECT, i.e., it remains [—completion] cf. 3. 2. 3. 1.). Sentence 1a. contains clearly a clause of purpose and sentence 1b. a clause of result.

Sentences 2a. and 2b. are also structurally homonymous. However, sentence 2b. contains a clause which is clearly of EFFECT (zabił się) of the CAUSE expressed in the first clause (Janek spadł z trzeciego piętra). Sentence 2b. contains two subject-predicate constructions which are connected by a CAUSE — EFFECT relation (cf. Karolak 1972). The clauses in sentence 2a. exhibit only a simple temporal succession. *Janek podszedł do drzwi* is temporally former to the second clause.

The above consideration shows that the criterion for identification of the clauses of result should not be sought on the formal — syntactic level but rather on the semantic level.

2.1. Syntactic structures have their relational meanings. A relational meaning combines smaller elements within one bigger unit. The construction *Peter or Paul* has the relational meaning of juxtaposition. The relation is semantic, being symbolized here by means of the conjunction *or*. The relation between CAUSE and EFFECT is an example of such relations (Klemensiewicz 1971). The present paper tries to provide a semantic definition of a sentence containing a clause of result as a sentence exhibiting a specific type of relation between CAUSE and EFFECT. The general scheme for all sentences containing the above relation is as follows:

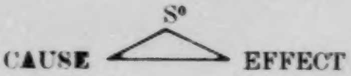

Diagram 1

S° is the uppermost symbol and is not dominated by any element. From S° we may generate two surface structure sentences (cf. 4. 2.).

——— between CAUSE and EFFECT indicates an existing relation between the constituents.

Since no categorial difference between semantic and syntactic categories is made here, CAUSE and EFFECT can be equally represented as S_1 and S_2 (perhaps with special indices) respectively, but for the scope of the present paper labels will be left for clarity of presentation.

THE NATURE OF THE RELATION BETWEEN CAUSE AND EFFECT, FEATURES IMPOSED UPON CAUSE AND EFFECT, AND THE CLASSIFICATION OF SENTENCES EXHIBITING CAUSE AND EFFECT RELATION

3.0 In the next section we will try to establish types of relations between **CAUSE** and **EFFECT** in order to obtain a classification of sentences which realize the above scheme.

3.1 One type of relation between **CAUSE** and **EFFECT** can be represented by an arrow (symbolizing implication *if ... then* as in logic) and the abstract verb [causes]. The notion of an abstract verb is similar to that of Robin Lakoff (1969).

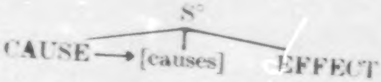

Diagram 2

The following sentences realize the above scheme:

3a. If you study hard, you will pass the exam.
3b. Jeżeli będziesz się uczył solidnie, to zdasz egzamin.
4a. If they caught him, they would shoot him.
4b. Zabiliby go, gdyby go złapali.

Traditionally the sentences are said to have conditional clauses.

3.1.2 It seems that some sentences containing clauses of result are derived from sentences of general character containing conditional clauses. The operation involves imposing a speaker's intellectual activity on the conditional scheme (i.e. drawing a conclusion from a known conditional scheme):

5a. Jeżeli uczyłeś się solidnie, to zdasz egzamin.
5b. Uczyłeś się solidnie, więc zdasz egzamin.

or perhaps from a more general scheme:

5c. Jeżeli ktoś uczył się solidnie, to zda egzamin.
5d. Ty uczyłeś się solidnie.
5b. Uczyłeś się solidnie, więc zdasz egzamin.

3.2 As far as the problem of semantic classification of **CAUSE** and **EFFECT** is concerned, we propose a set of classificatory features. This is a minimal set which allows us to distinguish types of relations between particular **CAUSEs** and particular **EFFECTs**:

CAUSE	EFFECT
[+efficient]	[+completion]
[−efficient]	[−completion]

CAUSE

[+efficient] — means that **CAUSE** can elicit an **EFFECT** in a given sentence

[−efficient] — means that CAUSE cannot elicit an EFFECT in a given sentence

These features are discussed in section 3. 2. 1. in a more detailed way.

EFFECT

[+completion] — means roughly that the EFFECT is already accomplished in a given sentence

[−completion] — means that the EFFECT is not accomplished in a given sentence

These features are discussed in section 3. 2. 3. 1. in a more detailed way.

Features are used here for a classificatory purpose (they help us to distinguish different types of sentences which exhibit CAUSE and EFFECT relation). They are not the basis for selectional restrictions as in the interpretative theory[1].

3.2.1 Let us consider some possibilities of cross-classification of features:

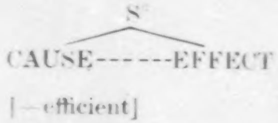

Diagram 3

This is the scheme for sentences containing clauses of concession. Comparing this diagram to the previous one it should be noticed that here the abstract verb [causes] is absent in deep structure. CAUSE in sentences containing clauses of concession does not carry the relationship which can be represented by the abstract verb [causes] to the EFFECT because EFFECT is "caused" by a real "cause" which is absent in sentences of this type. The following sentences realize the above scheme:

6a. Pomimo, że uczyłeś się solidnie, to jednak nie zdałeś egzaminu.
6b. Although you studied hard you have failed your exam.
7a. Pomimo że uczyłeś się bardzo mało, to jednak zdałeś egzamin.
7b. Although you studied very little, you have passed your exam.

It may seem that in sentences 6a. and 6b. the CAUSE is [+efficient], while in sentences 7a. and 7b. the CAUSE is [−efficient]. It is clear, however, that EFFECT in the above sentences is contrary to CAUSE and involves other factors than the CAUSE present in the sentences. It seems that in the above sentences the 'cause' of passing or failing the exam is not the amount of work of a student but some other 'cause' factors like 'luck', 'lack of luck', 'nervousness' and possibly many others. CAUSE because of its inefficiency here seems to be irrelevant to passing the exam. According to a speaker's (hearer's) presupposition an item may be a cause only if it elicits a proper effect. In the case of sentences containing clauses of concession our (the speaker's) presupposition fails (cf. Wierzbicka 1969, the analysis of *chociaż, mimo że,* etc.).

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[1] The features are not used here as the basis for selectional restrictions. The binary character of features in that function (i. e., to provide selectional restrictions which would eliminate deviant sentences) is unnecessary. Gruber (1967).

3.2.2 Let us consider another scheme:

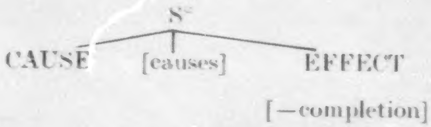

Diagram 4

This is the scheme underlying sentences containing clauses of purpose. The **EFFECT** contains idiosyncratically the feature [+intention]; however, the feature is irrelevant in differentiation of this type of C and E relation from other types, because other features may clearly differentiate purposive from other clauses. Another way of handling this problem is to ascribe to the more developed scheme the abstract verb [want].

The following sentences realize the above scheme:

8a. He bundled up Alice's clothes and personal possessions to give to Lucille. (C. M. C. 105)

8b. Zagarnął suknie i rzeczy osobiste Alice, żeby je dać Lucille. (C. M. C. Polish translation, 174)

9a. He had to undress and then kneel and say his own prayers and be in bed before the gas was lowered so that he might not go to hell when he died. (J. J. 62)

9b. Trzeba rozebrać się, a potem uklęknąć i zmówić pacierz i być w łóżku nim jeszcze skręcą gaz, żeby nie dostać się do piekła, jeśli umrze. (J. J. Polish translation)

3.2.3 Finally we will present a scheme underlying sentences containing clauses of result. The scheme is as follows:

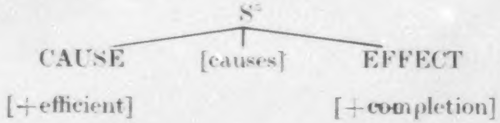

Diagram 5

The features and the abstract verb [causes] constitute together the idiosyncratic property of sentences containing clauses of result.

3.2.3.1 The most difficult problem is the distinction between sentences containing clauses of result (SCR) and those containing clauses of purpose (SCP). The feature [±completion] which specifies the type of **EFFECT** seems to solve the problem. EFFECT never has the feature [+completion] in the case of clauses of purpose as understood here (cf. sentences 1a., 8a., 8b., 9a., 9b.,).

Even if EFFECT is [+intended], but has the feature [+completion] such a sentence will be classified as SCR because a speaker's (and also a hearer's) attention is focused more on the completion of the EFFECT than on the intention. The test for completion may include aspect (perfective in the case of [+completion] and imperfective in the case of [—completion]). Sometimes the test is insufficient. Polish presents fewer difficulties as far as the problem of aspect is concerned. The second criterion may be the possibility of transforming sentences containing clauses of purpose into [—efficient] CAUSE which is a part of sentences containing concessive clauses. In the case of sentences containing clauses of result the transformation is in most cases impossible:

10a. Kupiłem sobie radioodbiornik, żeby móc słuchać Luxemburga.

10b. Kupiłem sobie radioodbiornik, żeby (móc) słuchać Luxemburga, ale nie mogę.

11a. Kupiłem sobie radioodbiornik, tak że mogę słuchać Luxemburga.

11b.*Kupiłem sobie radioodbiornik, tak że mogę słuchać Luxemburga, ale nie mogę.

12a. I bought myself a radio set and I can listen to the news.

12b.*I bought myself a radio set and I can listen to the news but I cannot.

13a. I have bought myself a radio set in order to listen to Radio Luxembourg.

13b. I have bought myself a radio set in order to listen to Radio Luxembourg but I cannot.

In the case of SCR the transforms are ungrammatical (11b., 12b.).

Let us consider the following sentences:

14a. Mick had grown so much in the past year that soon she would be taller than he was. (C. M. C. 112)

14b. Mick tak urosła w ostatnim roku, że niedługo będzie wyższa od niego. (C. M. C. Polish translation 182)

EFFECT seems to possess the feature [—completion], however, the speaker is convinced about the truth of the forthcoming EFFECT. EFFECT is not in the sphere of the speaker's wishes (as in the case of SCP) or intention but is very likely to happen. The speaker's certainty and the reality of the forthcoming EFFECT may decide in some cases about EFFECT's possessing the feature [+completion] as far as we can explore and judge a speaker's certainty and the reality of the forthcoming EFFECT.

3.2.4 Sentences containing causal clauses can be derived from the scheme for sentences containing clauses of result or clauses of purpose (contrary to Hartung 1964 and König 1971, who propose to derive SCR and SCP from sentences containing causal clauses) by means of a topicalization transformation. The transformation topicalizes EFFECT, and CAUSE becomes a comment. (The topicalization transformation is not entirely meaning—preserving as noticed by B. H. Partee 1971). During the transformation the abstract verb [causes] undergoes passivization:

16a. *Kupiłem sobie radioodbiornik*, tak że
CAUSE [causes]
będę mógł słuchać Luxemburga
EFFECT

16b. *Będę mógł słuchać Luxemburga* ponieważ
EFFECT [caused by]
kupiłem sobie radioodbiornik
CAUSE

SENTENCES CONTAINING CLAUSES OF RESULT

4.1. Let us return to the scheme underlying sentences containing clauses of result:

A sentence containing the clause of result is a sentence which has an underlying CAUSE and EFFECT relation which can be represented by means of the abstract verb [causes] when CAUSE has the feature [+efficient] and EFFECT has the feature [+completion] (EFFECT which possesses the above feature will be called RESULT in further considerations).

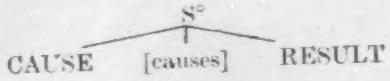

Diagram 6

The feature [+efficient] can be omitted from the diagram because the presence of the abstract verb [causes] unambiguously differentiates this type of sentence from sentences containing concessive clauses.

All possible sentences which realize the above scheme will be treated as sentences containing clauses of result.

A clause of result is a deep category (the notion is somewhat similar to a hypertagmeme on the clause level in the tagmemic hierarchy). This RESULT exists regardless of the possibilities of different surface realizations such as the traditional clause of result, an adverb of result (in rare cases), a traditionally independent clause in a paratactic construction or a traditionally independent sentence.

4.2 Let us examine the following sentences in connection with the above diagram:

22. Deszcz padał przez dwa dni i dwie noce. Skutkiem czego ulice zamieniły się w rwące potoki. (Ż.)

23. The emancipation of experience from immediate biological needs and the development of the ability to communicate the newly formed ideas of experience surely went side by side. The result was a new order of complexity and versatility. (Ch.)

The sentences contain CAUSE (e.g., *deszcz padał przez dwa dni i dwie noce*), RESULT (*ulice zamieniły się w rwące potoki*) and the relation between them (*skutkiem czego* and *the result was*). There is a period which separates CAUSE from [causes] RESULT in both cases. It seems that there are two possibilities of handling the problem: one which would eliminate S^c because the S^c would generate two surface structures, the second would retain S^c and introduce a transformation separating CAUSE and [causes] RESULT. Such a transformation would probably be also needed if we select the first possibility unless we accept that a period is in part a formal separating device of the relation [causes], but it seems that there is not any reason why we should do this since [causes] symbolizes the relation of conjunction rather than separation.

We choose the second alternative due to shared sentence modality:

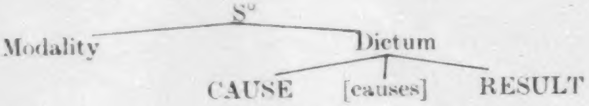

Diagram 7

4.3.1 The problem of the depth of analysis arises. The semantic theory which is being developed in Poland by Bogusławski, Wierzbicka, Bellert, Karolak and some others postulate an underlying semantic structure which is very deep. The representatives of the theory try to establish a set of atomic expressions (indefinibilia) which do not have a complex semantic structure. According to the representatives of the theory some simple sentences possess in their deep structure several CAUSE – RESULT relations. Grochowski (1972) presents this explication of the sentence *Jan rąbie drzewo siekierą*: "Siekiera styka się z ręką Jana (skutek), ponieważ Jan to powoduje (przyczyna) i siekiera styka się wielokrotnie z powierzchnią drewna (skutek), ponieważ Jan to powoduje (przyczyna) i drewno zaczyna być dzielone na części (skutek), ponieważ siekiera to powoduje (bezpośrednia przyczyna), ponieważ Jan tak chce (pośrednia przyczyna)".

In our terms the above analysis would be as follows (if we accepted the explication theory):

Jan [causes], siekiera styka się z ręką Jana
CAUSE RESULT
Jan [causes], siekiera styka się wielokrotnie z powierzchnią drewna
CAUSE RESULT

Jan [causes], siekiera [causes] drewno zaczyna być dzielone na części
CAUSE RESULT
CAUSE RESULT

The reason we will exclude such sentences as ***Jan rąbie drzewo siekierą*** from our analysis in the present paper is that CAUSE cannot be ***Jan***. ***Jan*** is an agent and the notions *agent* and CAUSE differ. CAUSE has to be represented as S (of 2. 1) and agent cannot be so represented in many cases.

4.3.2 Let us consider some sentences analyzed in Wierzbicka (1969). The explications may seem similar to the deep structure which underlines SCR:

Adam jest tłusty = Adam jest taki (ma to do siebie), że jego ciało jest tłuste.

Adam leży na kanapie = Adam jest w takiej sytuacji (z Adamem jest tak), że jego ciało leży na kanapie.

Such sentences have to be excluded from our analysis in spite of the characteristic formal signals for SCR and SCP present in the explication. They realize the scheme as proposed by Wierzbicka (1969) (it is not intended to be a scheme for SCR):

S_1 is such, that S_2 is P

The scheme differs from ours in the respect that it is more general. It may probably serve for the interpretation of such SCR's as:

Adam zachował się tak, że sąsiedzi musieli wezwać milicję.

or

Adam jest taki („ma to do siebie”), że kobiety za nim szaleją.

but also for such sentences as:

Adam jest taki, że jego włosy są rude (the explication of the sentence Adam jest rudy)

and

Adam jest w takiej sytuacji (z Adamem jest tak), że jego ciało leży na kanapie (all sentences are from Wierzbicka (1969).

The last two sentences do not realize our scheme:

Adam jest taki is not CAUSE nor does it cause anything. This proves that *taki; że* (such that) cannot be a dominating element in deep structure for the analysis of SCR and more abstract elements such as CAUSE, [causes], and RESULT are more helpful and adequate.

5.1 Let us procede now to the higher level of derivation of SCR. Such categories as N, V, S, NP, ANIMATE, HUMAN are both syntactic and semantic (ANIMATE as category is different from N by a degree of sensitivity — it enumerates smaller sets of elements than N) as in Gruber (1967). The principle of lexical attachment will be used in the present paper. The attachment will be polycategorial as in Gruber (1967).

5.2 The basic distinction between types of SCR is that between clauses of result expressing intensity on the one hand and manner on the other. There are no clauses of result of intensity and manner. Clauses of result are not differentiated in that respect. This is the problem of CAUSE and [causes]. A certain element of CAUSE Adjective or Adverb can be somehow scaled. The element is of great importance in CAUSE. The appropriate degree of intensity of the element makes CAUSE efficient. Let us consider the following sentences:

24a. The wind was strong so that we were able to sail.
24b. Wiatr był silny, tak że mogliśmy żeglować.
25a. The wind was so strong that we were able to sail.
25b. Wiatr był tak silny, że mogliśmy żeglować.

Sentences 24a and 24b differ semantically from sentences 25a and 25b. In sentences 25a and 25b the appropriate degree of the strength enables us to sail and in sentences 24a and 24b the mere fact of the strength of the wind enables us to sail. The fact that sentences 25a and 25b entail a degree of intensity or comparative element can be illustrated by the possibility of the occurrence of CAUSE in anaphoric statements:

26a. The wind was so strong...
26b. Wiatr był tak silny...
27a. The wind was strong so...
27b. Wiatr był silny, tak...

Sentence 27b can be grammatical if uttered with a special type of intonation.

CAUSE in sentences 25a and 25b has probably the following semantic structure:

The wind was strong to the certain extent
Wiatr był silny do pewnego stopnia

The entire sentences have probably the following semantic structure:

The wind was strong to the certain extent
It causes (so that)
We were able to sail

For the generation of such sentences we propose a rule: Adjective → (EXTENT). Extent means here that adjective is scaled (possesses a degree of intensity). This rule is similar to rules in Gruber (1967 : 60) (A→(B), when A is a necessary condition for B and B is a more sensitive category than A). The term 'extent' is used in König (1971) as a binary feature. The attachment of *so* before the adjective can be illustrated in the following way:

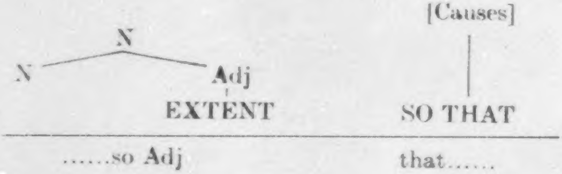

Diagram 8

In cases when Adjective or Adverb can be rewritten as EXTENT, the lexical attachment rule will map *so* or *such* before an Adjective or Adverb during the lexical attachment process. The following statement can be made: *so* can be attached immediately before *that* when the environment relevant to the insertion does not contain the category EXTENT. If the category is present *so* or *such* have to be attached before the dominating category of the category EXTENT. The same is true for English and Polish.

5.3 The problems examined above had the same relevance to English and Polish. Nevertheless some semantic structures of clauses of result differ in both languages. The difference is met even at a low level of analysis which fact is rather surprising. Let us consider the following Polish sentences:

28. Rozległ się taki huk, że aż szyby z okien powypadały.

29. Roman śpiewa i gra tak pięknie, że aż serce rośnie. (overheard)

The unique characteristics of these SCRs is the emphatic or extra strong RESULT. The English language lacks such semantic and formal structures. (This, of course, does not imply that English cannot describe such a segment of reality. It is possible to describe the extraordinary force of RESULT by means of appropriate adjectives or adverbs).

Therefore a contribution to our scheme has to be made in order to account for both languages under consideration. *Aż* in such Polish constructions belongs probably to RESULT. It seems, however, that it does not modify any special element of RESULT but the whole dictum. (In spite that it is tied most closely to a verb). There are probably two ways of handling the problem. One possibility will be to introduce a rule sort RESULT (EMPHATIC) or (EXTRAORDINARILY STRONG). The category will be a sine qua non condition for the attachment of *aż*.

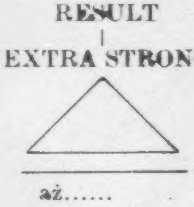

Diagram 9

The second possibility of handling the problem will be the expansion of RESULT into MODUS and DICTUM (Modality and Proposition or Nucleus):

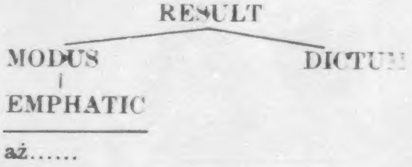

Diagram 10

There is almost no difference between the two alternative solutions except technically. The selection of one alternative will depend on the relevance of Modus dominated by RESULT to the further analysis.

5.4 It seems that Polish has more connecting indicators in the case of SCR (*taki... że, tyle... że*, etc.).
However some of them have complex semantic structures. Let us examine Polish sentences with *tyle* and some equivalent English sentences:

30a. Miałem kiedyś tyle pieniędzy, że kupiłem sobie dom z ogródkiem i samochód.

30b. Once I had so much money that I bought myself a house with a garden and a car.

It turns out from the comparison that *tyle* is *tak dużo* in deep structure. In English that meaning is not compressed into one unit (*so much, so many*).

It should be noted that there is another word *tyle*$_2$ which is semantically different from *tyle*$_1$ e.g.,

Skręcił w pierwszą lepszą ulicę i tyle go widziałem (TV *tyle*$_2$)

Probably there is also *tyle*$_3$ meaning enough.

The above interpretation of *tyle*$_1$ allows us to reduce the number of conjoining indicators in deep structure. If DUŻO occurs in deep structure it may be optionally attached as *tyle* in the environment of TAK, ŻE.

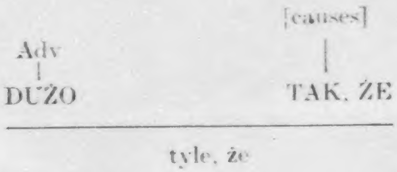

Diagram 11

e.g.

31. Widziałem tyle, że już mnie nic nie zdziwi.

and for sentences like 30a.:

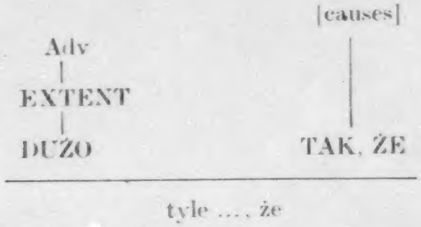

Diagram 12

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REVIEW

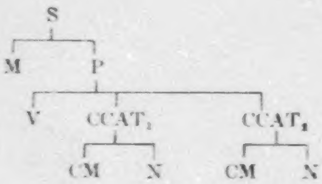
Language structures in contrast. By Robert J. Di Pietro. Pp. 193.
Massachusetts: Newbury House Publishers, Rowley, 1971.
Reviewed by Tomasz P. Krzeszowski, University of Łódź.

Contrastive analysis (CA) for the past decade or so has been struggling through a rather difficult period. The rapidly evolving linguistic theory does not favour convenient and easy applications since the investigators in the area of CA are constantly being tormented by new developments in the theory which they are reluctant to ignore for fear of being outdated. Psycholinguistic research does not help matters either. What once was expected to be a neat set of predictions concerning learning difficulties in a foreign language has now become at the best a set of statements which *ex post* can be utilized in explaining *some* of the errors made by the students, which constitute *some* of the learning difficulties. The pedagogical value of CA is becoming less and less obvious and the solutions therein more and more removed to a remote area near the horizon. Experiments demonstrate that errors in a foreign language cannot be exclusively attributed to differences between the native and the foreign language. The best that CA can do is to predict areas of potential mistakes without making any claims as to whether or not and in what circumstances they are likely to occur in actual performance.

Di Pietro in his book skillfully manages to navigate his CA boat amidst the rough and rocky seas of linguistics and psychology despite the discouraging fact that the land is nowhere to be seen. Fortunately, the author does not rest assured and does not claim that his is the only method of procedures. On the contrary, he is constantly aware that his construction may prove to be inadequate, that future theories may shatter his own theory and he finally realistically concludes, as if in self-defence: "we cannot afford to be doctrinaire either about our linguistics or our language teaching" (p.175). With this sentence as our motto let us set about examining Di Pietro's book in more detail.

The book consists of eight chapters centering around three thematic groups. The first group contains the exposition of theoretical and procedural foundations of CA and includes chapters on "Developments in CA" (Ch. 1), "Theory and procedures" (Ch. 2) and "Aspects of language design" (Ch. 3). The second group contains a discussion of various components of language design seen in the contrastive dimensions. It includes the discussion of "The syntactic component" (Ch. 4), "The semantic projection" (Ch. 5), "The structure of the lexicon" (Ch. 6) and "The phonological component" (Ch. 7). Finally, there is a chapter on "CA and the foreign language teaching" (Ch. 8). The inevitable list of references and index end the work.

Di Pietro's linguistic theory is a modified version of the "case" grammar suggested by Fillmore (1968). It differs from both Chomsky 1965-model and Fillmore 1968-model in that in Di Pietro's model in contrast with Chomsky's those deep structure categories which are later realized as NP's are not arranged in any linear or hierarchical order analogous to the order in which NP's in Chomsky's deep structures appeared. Di Pietro's model differs from Fillmore's in that the former contains language-free "universal" categories or as Di Pietro chooses to call them "syntactic primes" like Name and Verboid in addition to S(entence), M(odality), P(roposition) and C(ase) CAT(egory). Di Pietro defines Name as "a unit of arrangement which refers to that property of human languages whereby objects and notions are indexed" (p. 39). In particular languages this universal category may but does not have to be realized as Noun (reportedly, there is at least one natural language, Nootka, lacking the category noun (cf. Hockett 1958: 224)). VERBOID is the label given to another unit of arrangement which has to do with the description of relationships among NAMES. In particular languages verboids are realized not only as verbs but also as adjectives and possibly as adverbs. The other universal categories in Di Pietro's DS are arranged hierarchically in the following fashion:



where CM is a case marker and where the linear ordering of constituents is irrelevant.

Unlike in Fillmore (1968) the specifics of case, i.e. agent, instrument and the like are provided by the semantic projection rules and are not generated by the syntactic rules to justify Di Pietro's claim that his base rules are more constistently syntactic than Fillmore's. We shall comment on this point later. At the moment let us observe that this sort of hierarchical arrangement as well as the recognition of S as a syntactic prime in this particular framework raise certain doubts.

If Noun Phrase and Verb are dismissed from the universal DS on the grounds that they are too "suggestive of the surface restrictions of particular languages" (p. 56) then S should be dismissed on the same grounds. Surely sentences in particular languages observe a vast number of surface structure restrictions stated by the grammars of those languages. In Chomsky's DS S directly dominated NP and VP, which reflected the assumption that every sentence in its surface structure consisted of a Noun Phrase and a Verb Phrase in that order, unless transformed otherwise. This sort of DS was a direct result of the analysis of every sentence, at least in English, into two immediate constituents labelled as NP and VP respectively, which provided the thus posited deep structure with categories related to a certain surface structure reality. Admittedly, not all sentences could be analysed thus, but at least every sentence could be "untransformed" to restore the basic underlying shape inevitably constiting of NP followed by VP. It was furthermore known that every NP contained a Noun as one of its constituents and every VP contained a verb or *be*. Thus the DS categories were not different from surface structure categories and consequently the initial element S was justified in that it dominated all the categories which appeared in the surface structure of sentences in addition to whatever symbols were necessary to trigger off appropriate transformations mapping the deep structure into the surface structure.

In Di Pietro's DS s no longer dominates those categories which in the surface structure are constituents of sentences. Instead it dominates a number of "syntactic" units which in various languages are realized as various surface structure categories in a vast multiplicity of ways. For example, Modality cannot be associated with any single type of expansion. As a matter of fact, in purely syntactic terms it cannot be expanded at all in any predictable way statable in terms of PS rules as it incorporates various semantic elements highly heterogeneous from the point of view of syntactic realizations, such as time, aspect, question, negation, etc. Moreover, it is feasible to predict the possibility of a particular DS being realized as one surface structure sentence in one language and as two or possibly more surface structure sentences in another. It may even be possible for one DS to be realized as one or more sentences in the same language. Nonrestrictive relative clauses constitute a good set of examples:

John is a coward. He ran away.
John, who is a coward, ran away.

Whether or not the two phrase markers underlying *John is a coward* and *He ran away* come under the domination of one S is a matter which cannot be decided upon at the level of DS suggested by Di Pietro. These sentences demonstrate that what in the DS is a single Sentoid (?) in the surface structure may be realized as two sentences, whose meaning is exactly equivalent to the meaning of the corresponding one-sentence realization. The common DS correctly reflects this situation but it contains no clue as to the number of sentences which are its surface structure realizations. Sentences with concessive or resultative clauses which Di Pietro associates with Modality furnish yet another example akin to ordinary conjoining for which conditions are stated in the area extending beyond the realms of grammar. Observe that

If it rains, I'll take my umbrella

can be a paraphrase of

It will rain and I'll take my umbrella

understood conditionally and not sequentially. In the equivalent Polish utterances

Będzie deszcz to wezmę parasol
Będzie deszcz, to wezmę parasol
Będzie deszcz; to wezmę parasol
Będzie deszcz. To wezmę parasol

the punctuation varies from nothing to a full stop separating the two constituent sentences. The conditional meaning underlying all the sentences cannot be correctly represented in any non-counterintuitive way unless the same deep structure is postulated for all these sentences.

The contradictory nature of the problem has its roots in the fact that although Di Pietro believes that his DS contains syntactic primes in reality it is a construct representing *semantic* relations underlying surface structure sentences. If one defines one's term as something "which represents man's universal need to label objects, ideas and sentiments which are subject to his cognitive powers" (p. 56), one cannot be serious about insisting on calling the thus notionally defined object a syntactic prime since syntactic primes can only be defined in terms of syntactic markers such as word order, function words, etc., or in terms of syntactic transformations operating on such objects. Another confusion of a similar sort arises from the exclusion of role specification from the base. Roles are relevant in determining the arrangements of syntactic entities. Such processes as subjectivization and objectivization can only be triggered off by the presence of specific roles in the derivation (cf. the appropriate rules in Fillmore 1968, the UESP grammar 1968, Langendoen 1970). If the specification of roles is relegated to the interpretation of the semantic projection rules then the theory collapses since the resulting DS no longer uniquely determines the semantic interpretation in so far as one array of Case Categories can be assigned a variety of roles by the semantic component.

The difficulties discussed above seem to point to the suggestion that for the purpose of conducting CA it is necessary to adopt such a model of language design in which distinction is made between the semantic structure as input to transformations and the syntactic structure as output of transformations. Consequently, consistent difference must be made between semantic primes of the semantic structure and surface structure categories. Di Pietro's terms **NAME** and **VERBOID** are quite appropriate as labels for semantic primes, while **SENTOID** could be suggested as the term referring to the DS "sentence". Syntactic categories could be traditionally labelled as Nouns, Verbs, Adjectives, Adverbs, and various function words, constituents of surface structure sentences in addition to such minor categories as tense, aspect, etc. In his attempts to construct the universal syntactic base Di Pietro is only half successful since, as was pointed out above, he cannot help introducing semantically grounded terms into his syntactic model of the base. It may prove necessary to go further and postulate a universal semantic base free of all syntactic relations which are inevitably language specific in any meaningful sense of the word syntactic. The existence of such a universal semantic base would be considered to be the initial postulate for the construction of contrastive grammars.

Di Pietro views language as a multidimensional design consisting of syntax which is central in the sense that it provides the initial node S and hence the beginning of all derivations. The output of the syntactic component is fed into the semantic component which interprets the structures generated by the syntactic component and thereby provides input to the phonological component which presumably accounts for the outer form of sentences. This organization is illustrated in the figure on p. 37. Surprisingly, Di Pietro's design accommodates no such thing as transformations desipte his claim on p. 29 that "the grammatical theory which will be adopted in this book is the transformational-generative one". Instead he talks rather vaguely about "deep-to-surface rules" (p. 25), or "specific syntactic ordering rules" (pp. 68 - 70 and the diagram on p. 46) as well as about "realizational rules" (p. 73), without ever mentioning either some formal properties of such rules or more specific effects which they have upon deep structures apart from their general function consisting in converting deep into surface structures. This is a pity since if, as Di Pietro claims, DS is universal, the most interesting things for a CA analyst occur at the levels at which these rules operate since presumably these rules account for the variety of the surface phenomena in particular languages. Di Pietro is aware of the importance of the explicit statement of the rules in CA when he writes on p. 27: "Since it is possible to show that the differences between languages can be found at any number of stages between the deep and surface structures, we are also provided with a metric to measure the similarity between languages; languages are similar to each other in proportion to the number and hierarchical ordering of rules shared in the intermediate levels." On the other hand, however, a wholesale treatment of languages seems a trifle premature at this stage of research. It would be safer to talk about the proportion of rules employed in the derivation of particular sentences and constructions rather than about similarities of languages based on the number of shared rules, especially in the situation in which these rules are not adequately formulated and listed.

Although a special chapter is devoted to the structure of the lexicon (Ch. 6, pp. 109 - 134), its function in Di Pietro's model is rather obscure. As a matter of fact it is not even repreesented in any of his models of language design, either on p. 37 or on pp. 46 - 7. It remains a puzzle throughout the book how particular lexical items (or perhaps lexemes or morphemes) are inserted into phrase markers and at which stage of the derivation. In Di Pietro's lexicon the entries are characterized in terms of matrices of semantic features such as [±human], [±concrete], [±localized], [±animal], etc., for names. The features are selected from the universal repertory of semantic features. Each language makes use of a specific set of these features discovered by the analyst on the basis of contriving the so-called "decompositional contexts", analogous with Katz and Fodor's "disambiguating settings" (Di Pietro erroneously has it "disambiguating sentences"; cf. Katz and Fodor 1964: 487), which reveal a certain number of semantic features. It appears, however, that there is no a priori way to set an upper limit on the number of such contexts and consequently on the number of features. Only considerations of how sensitive our grammar should be and to what extent it is worthwhile to make it more and more refined are relevant. Di Pietro seems to realize this when he quotes Bolinger's (1965) critique of Katz and Fodor, yet he plunges headlong into designing some decompositional contexts for the English items "meat" and "flesh", arbitrarily stopping at the point where he has discovered six features. This procedure, however, allows Di Pietro to compare the English matrices for "flesh" and "meat" with the matrices of equivalent lexical items in other languages such as Portuguese, German, Vietnamese and Bengali in order to draw the well-justified conclusion that "a lexeme-to-lexeme comparison of languages would not be very fruitful". Regrettably there is no mention of how verbs are characterized in the lexicon, nor is there any indication of how lexical entries are characterized in terms of syntactic features.

Notwithstanding the shortcomings many of which can be easily remedied, the theory adapted and adopted by Di Pietro seems to be the best of the currently available linguistic theories as it provides a framework for carrying out the tasks he sets forth for his CA. It provides the necessary universal platform of reference and the necessary set of concepts for stating the similarities and differences between contrasted languages. Di Pietro characterizes his model of CA as generalized and taxonomic. Generalized is understood as an antonym of autonomous, i.e. as relatable to universal features of compared languages. Taxonomic in the sense employed by Di Pietro stands in opposition to operational and not to generative. An operational model of CA would be "a linguistic analog to those mental processes which may be at work in acquiring a foreign language" (p. 18). Di Pietro correctly points out that operational models are much more difficult to construct than "taxonomic" ones since the former require the formulation of conversion rules operating on the source language, converting the forms of the source into the forms of the target language. Yet there is no way of predicting the sort of conversion rules that may be adopted by a learner of a foreign language. What Di Pietro seems to be saying is that operational models in principle can be constructed but their practical utility in language pedagogy is difficult to determine. On the other hand, Di Pietro claims taxonomic models based on generative rules of contrasted languages can be very effective, especially in "handling contrasts which involved minutiae of structure" (p. 19). One wonders whether perhaps even better insights could not be gained from those models of CA which without being operational would be generative in that they would enumerate (define) equivalent sentences and constructions in the contrasted languages and specify identical and different rules employed in their derivation. A detailed proposal along these lines is given elsewhere (Krzeszowski 1972).

Assuming his model of CA to be generalized and taxonomic, Di Pietro suggests three steps in contrasting any two languages. The first step involves stating differences between the compared languages in terms of what Di Pietro cautiously calls "surface features", such as for example number, and observing how if at all a given "feature" is realized in a given language. In the second step Di Pietro's procedures involve postulating underlying universals. The universal in his example is NUMERAL. It must be noted that "universal" does not stand for a surface structure feature universally shared by all languages but rather for an underlying conceptual (notional) feature (category) which may have different surface structure realizations ranging in different languages from a large number of overt realizations to no overt realizations. The third step involves the formulation of deep-to-surface rules accounting for the various realizations of universal categories in various languages.

The proposal implies that the first step must be performed more or less intuitively since only in step two are the categories discovered, in step one made explicit. What worries the reader is the problem of how one can set out to look for number inflections in any two languages without first postulating the concept of number. On the other hand, without finding an overt realization of a certain notional category in at least one language how is one to arrive at such a notion a priori? The way Di Pietro formulates his steps one and two leads to a vicious circle: one cannot talk about surface structure realizations without the universal notional framework underlying those realizations, while at the same time one cannot establish with any degree of certainty the existence of the DS notional categories without examining surface structures of the contrasted languages. The situation is further aggravated by the lack in Di Pietro's procedures of any criteria of comparability. How is one to know what to compare in two languages without having a means of matching the relevant portions of the compared material? In a short section on translation as a basis for CA, the author admits that translation could be employed as a technique to initiate CA but nowhere in the book is this idea either employed or expounded. To break the vicious circle it would be necessary to accept as a matter of initial postulate that for the purpose of CA all equivalent sentences in all languages have identical semantic structures (the content of lexical items aside) and proceed to inspect the rules which account for surface structure diversifications (details in Krzeszowski 1972). In *Language structures in contrast* the status of universal grammar is by no means clear in spite of the author's efforts to make it sound so. Di Pietro is not very rigorous in his use of the term "universal". In one place (p. 22) he talks about universal grammars as opposed to particular grammars. On the same page and throughout the book he also talks about universal features. But the word feature is used in a non-technical sense as it covers such phenomena as interrogation, proposition formation, identification of ego and denial/acceptance. He also describes some of the rules in his various components as universal. The diversity in the use of the term universal reinforces the doubt that the reader entertains with respect to the ontological status of Di Pietro's universal grammar. It is hard to infer from the reading of the book whether the universal grammar as understood by Di Pietro, in so far as it embraces general language design as well as substantial and formal universals, is a hypothesis about innate ideas, as is implied on pp. 8 - 9, or whether it is an abstraction of what is identical in particular grammars, as step two of CA procedures on pp. 29 - 30 would suggest, or finally whether it is an initial postulate required in the construction of generalized models of CA and as such bears no necessary relation to any psychological reality. It may be that universal grammar as Di Pietro understands it is none of these or all three of these. Whatever is true, the author does not state his case in unequivocal terms.

Language structures in contrast contains a large number of more particular problems some of which merit a lengthy discussion which we cannot afford in the present review. Let us briefly discuss a few of them in the order in which they present themselves in the book.

There are a few errors of historical nature. For example, on p. 25 it is implied that the difference in the deep structure between *Helen is easy to please* and *Helen is eager to please* was pointed out by Fillmore. In fact such sentences were first discussed in TG terms by Chomsky (1962).

Following Chapter 2, Hockett (1958) is recommended as a reading on the subject of competence and performance. It must be noted, however, that although the quoted source contains an excellent discussion of the distinction between language as a system of habits and acts of speech as directly observable historical events, the terms *competence* and *performance* are not used. As far as I know these terms were first used by Chomsky (1962).

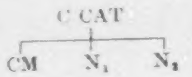
On p.36 Di Pietro's language design is described as "generative" on account of its being "statable in terms of rules which are predictive of all sentences possible in a language and not restricted to a single corpus of them". In fact the word *generative* is usually used with reference to those grammars which are not only predictive but also explicit (cf. Chomsky 1965: 184). If 'explicit' were omitted from the definition of 'generative' then 'generative' would also refer to a large number of traditional grammars of pre-structural sort, which were also predictive without being explicit (cf. Lyons 1968: 155).

The discussion of DS is fairly muddled from a historical point of view. Chomsky (1965) and Fillmore (1968) are quoted side by side as responsible for inspiring the DS designed by Di Pietro, but he neither acknowledges the fundamental differences in the design of Chomsky's DS in comparison with Fillmore's DS nor argues Chomsky's (1968) claim that Fillmore's theory is but a notational variant of what Chomsky calls 'standard' theory which roughly corresponds to the model expounded in Chomsky (1965).

In support of the statement that adjectives are a subclass of verbs (p. 88) reference is made to Ross (1967) where adjectives are not discussed at all. As far as I know, Ross's opinion on the matter is quite different in so far as he considers adjectives to be deep structure NP's, at least in his article "Adjectives as noun phrases" (Ross 1969). Incidentally, the article is listed in Di Pietro's bibliography but does not seem to refer to anything in the text.

Of other minor points, the following ones deserve mention. The assignment of case features to certain NP's is at places, mildy speaking, surprising. *The boy* in *the boy sees the girl* (p. 23) is assigned the specification agent and Fillmore (1968) is quoted in support. If one consults the source one finds on p. 31 that *see* and *know* differ from *look* and *learn* in that only the latter pair appears in the frame involving objective and agentive, while the former can only be inserted into frames with objective and dative. If Di Pietro thinks otherwise he should have explained his position which directly contradicts the acknowledged source. In *there arrived an* **old man** *at the inn*; *once there lived a* **giant**; *there is a* **man** *in space* (pp. 79 - 80) the underlined NP's are considered to be objective. It is difficult to see how being objective they represent "things which are affected by the action or state identified by the verb" (Fillmore 1968: 25). It would be interesting to know what sort of semantic or syntactic criteria are applied in assigning this sort of interpretation to NP's.

The discussion of conjoined NP's and VP's also stimulates a few doubts (p. 105). In the first place, the suggested recursion of constituents in the DS represented as



according to Di Pietro underlying *John and Mary are here* must be regarded with considerable suspicion. For one thing it does not account for such paraphrases as *John is here and Mary is here too.* In order to account for such paraphrases it would be necessary to allow for S's to be conjoined in DS with erasure operating optionally on identical predicates. (For arguments in support of this solution and a critical discussion of alternative solutions see the UESP grammar (Stockwell, R., et al 1968 : 324 - 344)). Furthermore, the rule formulated by Di Pietro, being a rule schema affords no possibility of specifying the logicosemantic conditions for the operation of the conjunction transformation. The rule schema cannot be expanded in any non-intuitive way to exclude such anomalies as

*John and Mary are pregnant

*John killed Mary and had children with her, etc.

Di Pietro's discussion of conjoined sentences raises another controversial problem concerning the limits of grammatical sensitivity. Di Pietro says that according to him and those native speakers who he consulted *Mary washed and dried her hair* sounds more natural than *Mary washed her hair and dried it*, since *wash* and *dry* express actions which are "somehow closely connected" as opposed to *write* and *mail a letter* which are not so connected. Consequently, both *Joseph wrote and mailed the letter* and *Joseph wrote the letter and mailed it* sound equally natural to Di Pietro and his informants. This is a very delicate distinction that Di Pietro is trying to make. It is difficult to see what semantic features *wash* and *dry* share that *write* and *mail* do not. But even assuming that such features are possible to isolate, one wonders whether they would be sufficiently general to warrant postulating such nice distinctions, especially in view of the fact that any violation of restrictions ensuring from such distinctions does not lead to the production of ungrammatical or even semantically anomalous sentences but merely to the production of sentences which occur less frequently in actual speech. Should the grammatical theory be concerned with such distinctions? Surely, the apparatus required for this purpose would grow to such enormous sizes that the applicability of the grammar constructed in this way would be seriously limited. One doubts whether it pays to refine the theory to account for such minute distinctions.

In the final chapter Di Pietro concerns himself with CA and FL Teacher. The chapter is brief and sketchy. Regrettably apart from some fairly general statements no direct connections between CA and the teaching process are demonstrated. A substantial part of the chapter consists of the summary of Stockwell and Bowen's (1965) hierarchy of difficulties in phonology. No mention is made of the analogous list for grammar (Cf. Stockwell, Bowen and Martin 1965 : 184). The hierarchy of difficulties constructed by Stockwell and Bowen, although internally well-motivated, cannot remain unchallenged by actual practice. It is impossible to expect from CA more than results of comparisons. Potential mistakes can be predicted with only some degree of accuracy but without certainty since mistakes often arise through various extralinguistic factors as Di Pietro himself admits earlier in his book (p. 21). Therefore, hierarchies of difficulties suggested by Stockwell and Bowen and duplicated by Di Pietro have only quite limited practical uses without some further distinctions. Specifically, the idea of difficulty must be made more precise since in the present framework it is a very comprehensive notion embracing such psycholinguistically varied phenomena as difficulty in memorizing a particular pattern, difficulty in repeating and reproducing its form, reluctance to use it, difficulty in understanding and learning its structure and/or its meaning, etc. All these factors must be considered if a workable hierarchy of difficulties is sought. It may be a rhetorical question to ask how many of these parameters constituting difficulty can be reasonably correlated with the results of CA.

Another portion of the chapter deals with some well-known techniques of developing audio-lingual skills with the emphasis on the contrasting places in the target language. It seems, however, that a practising teacher will find little in this section beyond what he already knows from his teaching practice, e.g. the technique of teaching the Progressive Aspect in English (p. 169).

The remainder of the chapter contains some useful and original thoughts connected with bulding what Bruner (1966) calls 'competence drive', even if the final conclusion is not very helpful: "Much research is needed on how to build 'competence drive'".

Although published by American publishers, usually very reliable in editorial matters, the book suffers from a large number of misspellings, omissions and other technical blunders. Those that I bothered to note are the following: the reference to Longacre (1965) on p. 58 is empty since no publication by that author from 1965 is listed in the bibliography; on p. 37 *states* should read *stages*; on p. 74 one finds a superfluous *could*; on p. 104 "which follow prepositions" should read "which follow propositions"; on the same page the German word *odor* should read *oder*.

In conclusion it must be emphasized that in spite of the lengthy criticism expounded above and traditionally highlighted in most reviews, the book under discussion does constitute a valuable acquisition to the literature on CA. It presents the state of the art in an orderly way and though not free from errors of all sorts it provides a necessary theoretical and practical guide for constructing pedagogically oriented CA. The author must be admired for undertaking a difficult and ungrateful task and applauded for fulfilling it with success inhibited primarily by inadequacies of the current linguistic theory and only in a relatively small measure by slips of his own.

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Adam Mickiewicz University, Poznań

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